

Present Status of the Information Network System for SPring-8

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1. Introduction

The second stage of the preliminary network system^[1] was up-graded this year for the new people of the SPring-8 beamline group, and an Ethernet extension in the SR A4, D3, D4 zone has been made. Telephone and PHS (Personal Handy phone System) system was installed in July 1995.

2. Optical Fiber and PDS Network

Utility building, SR-D and A zone network were linked by fiber optic repeaters. High speed (>100 Mbps) computer network (ATM) is to be introduced in '96 or '97. The SR outer side ABF (Air Blown Fiber) system was introduced for these purpose. This ABF system contains sixteen 62.5 micron (GI) fibers and sixteen 10 micron (SM) fibers, which are connected from SR-A to B, C and D zones. A new PBX (Private telephone Branch eXchanger) system takes an optically distributed system. Five remote PBX units are connected by the 10 micron SM cables. The PDS (Premises Distribution System; Sanki Co. and

AT&T)^[2] were expanded for those areas and use category-5 cables.

3. Telephone System

A new telephone and PBX system (NEC: APEX-7400) were installed in July 1995. It is connected with a wireless module system for the PHS. This PHS covers all of SPring-8 buildings. Sixteen antennae in the experiment hall (circumference of the SR is 1436 m), eight in the machine hall are installed for the SR (Fig. 1). Also, 16 for LI/SY (Linac / Synchrotron) and 6 for the other buildings. It can be connected to Harima Science Garden City's major buildings (ex. CAST and HIT). 300 telephones and 100 PHSs was installed in 1995, and 900 telephones and 400 PHSs are to be installed until 1997. The PHS wireless module will be combined into one PBX operating system in October 1996, and then a voice mail system can be used in PHS also. A computer oriented dialing system using a Database and WWW browser will be installed by the PBX's workstation.

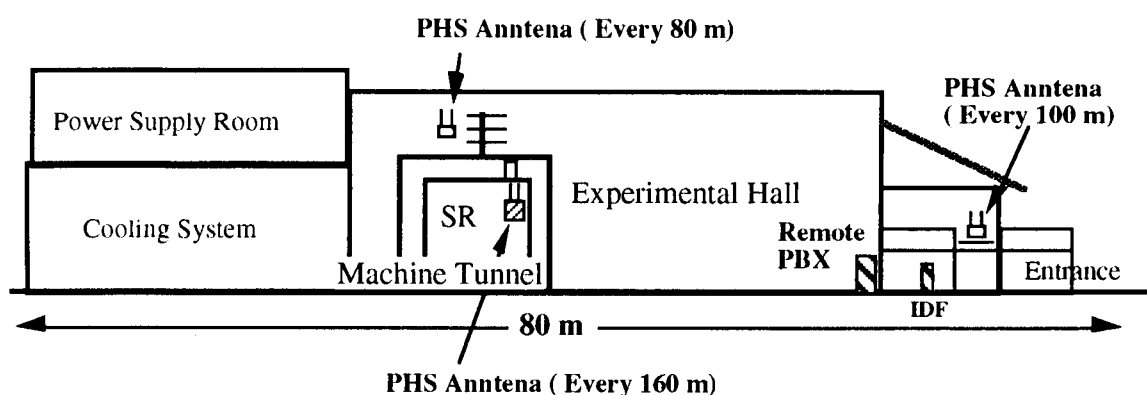


Fig. 1. This PHS covers all of SPring-8 site buildings.

4. Computer Network

The PDS boxes of newly constructed SR zones (A1, D3, D4 zone) and a utility control facility were equipped seven 16-port 10Base-T HUBs, two yellow cables, three Appletalk gateways (Fast Path-V), and

three Phone-net star controllers, as seen in Figure 2. The outer network connection; TISN (Tokyo University International Science Network) was replaced by an IM-Net (Inter Ministry Network) through an Osaka NOC on March 25th 1996 via 512k bps SD

(NTT) line.

The total number of the SPring-8 staff is 350 March 1996. The total number of the workstations, personal computers and VME computers is 300.

WWW information service started regally in January 1996. Database oriented phone number and meeting scheduling system will start in May 1996 with WWW.

For the bigger network traffic expected next year, the router and Ethernet must be up-graded. An ATM network system will be taken all over the SPring-8 buildings. Figure 3 shows a future plan of the SPring-

8 network. Fourteen sets of Ethernet Switchers and Fast-Ethernets will be distributed in the SR building for the SR beamlines and preparation rooms. Four sets of those for main building, one for LI/SY and New Subaru facility, and some for Harima RIKEN buildings are to be introduced. Those small networks are connected to the ATM switcher and a router in the central network room through the ABF's GI and SM optical fibers.

Each room of the guest house will have 10Base-T network.

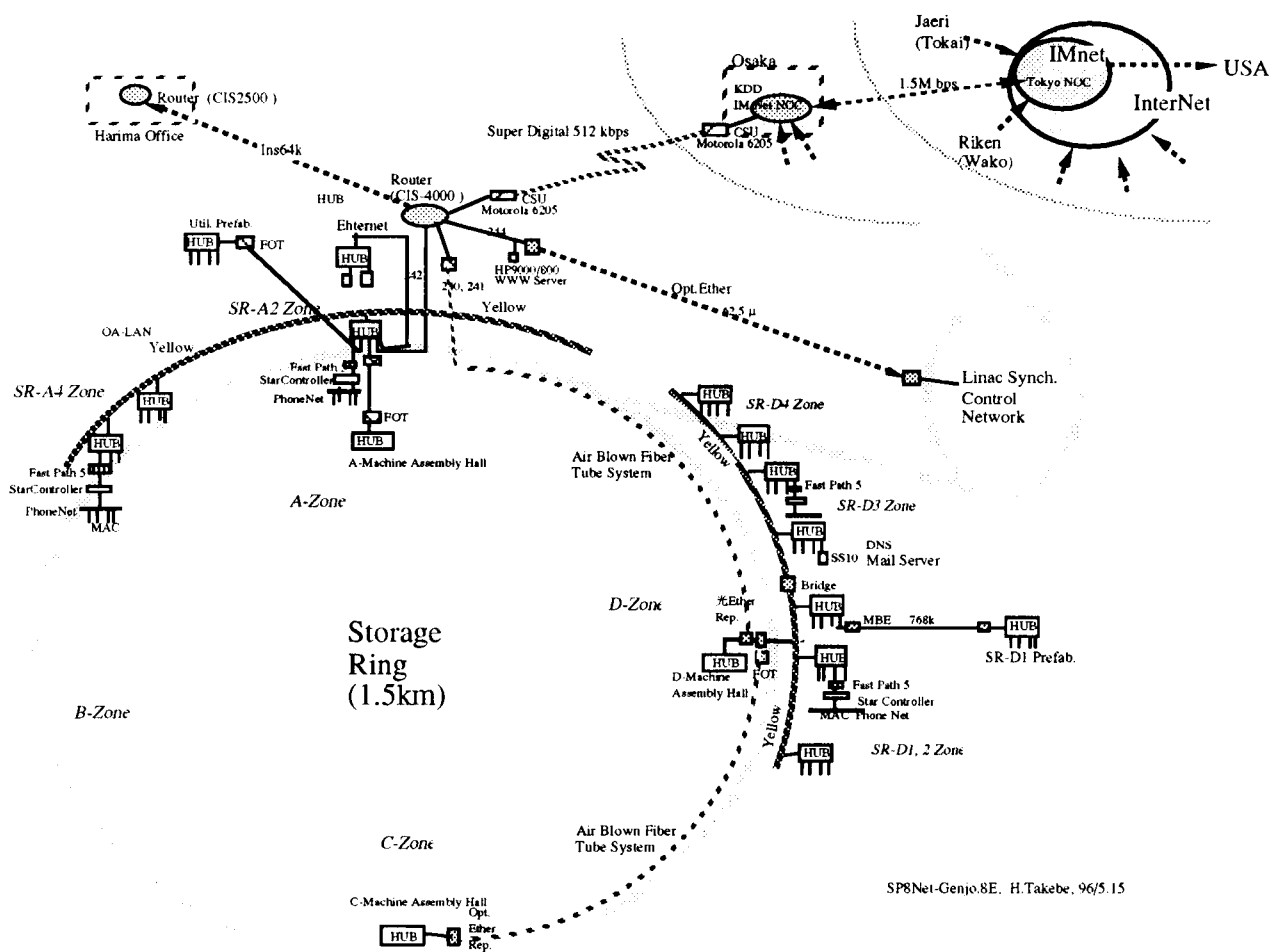


Fig. 2. Computer network of the SPring-8 site (3rd stage).

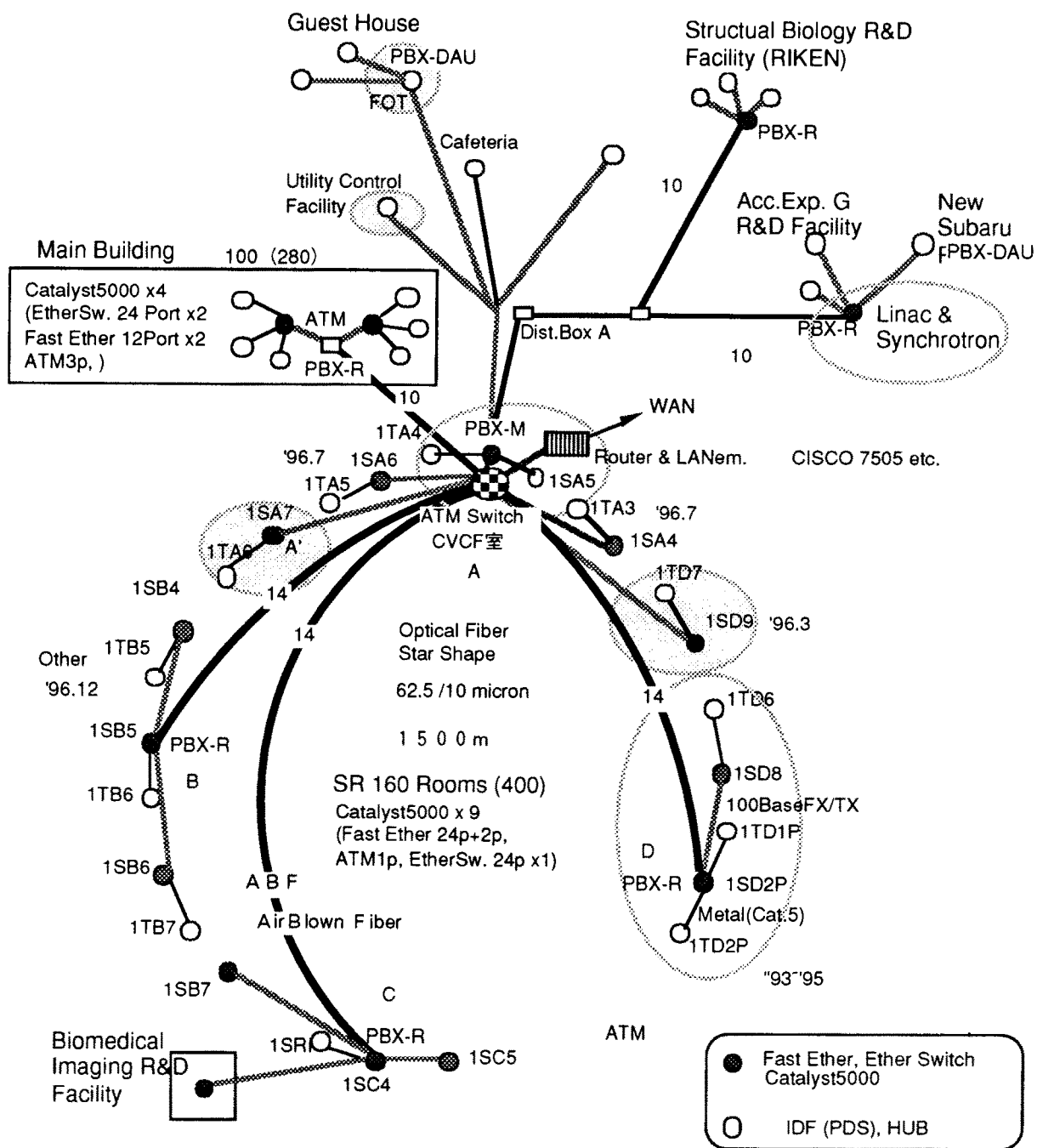


Fig. 3. Future Plan of the SPring-8 Network.

References

1) H. Takebe et. al. :SPring-8 Ann. Rep. 1, 243 (1994).

2) H. Takebe et. al. :RIKEN Accel. Prog. Rep. 27, 149 (1993).