

Information Network System

1. Introduction

The network and telephone cable maintenance and management system (Cable Manager) was introduced this year. Accordingly, the number of network connection HUBs and switches slightly increased in 1998. SPring-8 annual operation schedule and the current operation status of SPring-8 have been on view to the public through SPring-8 homepage. SPring-8 TV channel is also on-air in the guest houses. To promote office automation, JASRI OA group in the administration sector has installed groupware on the SPring-8 Network.

2. Network System

The Cable Manager (FIT Pacific Co., Ltd.) system was introduced this year to manage physical information on the LAN and telephone system network at the SPring-8 site. Both graphics and database are used to quickly layout, analyze and document the network environment. Storage data for the cable connection and configuration of all other cables and optical fibers in the entire SPring-8 site were implemented in December 1998. This work is being done in collaboration with the SPring-8 Facilities and Utilities Division.

Figure 1 shows the network configuration, which consists of a central Ethernet V-LAN [1] switch (CISCO: Catalyst-5500), five Fast Ethernet (FE) V-LAN switches (Catalyst-5000 or 2900) and ten Fast Ethernet switches. Fourteen Ethernet LAN switches (eight ports of the 100/10 Mbps auto-negotiation, Netgear: FS-508) for the SR- A to D zones were adopted in 1997 [2]. These are connected to the central V-LAN switch by optical fibers. The conventional yellow cable (10 Mbps) Ethernet is used as a general purpose network in the storage ring (OA-LAN) [3]. The beamline users network was upgraded to a Fast Ethernet system in the beamline experimental hall and preparation rooms of the storage ring (SR) last year. The configuration of the beamline network in the SR experimental hall was changed this year by introducing firewall technology to protect network security for the beamline.

Network HUBs (10/100Mbps) in the structural biology facility of Harima Riken and the biomedical imaging center were added to the original network system because of the increased number of users.

Twenty-four GI (62.5 micron) and twelve SM (10 micron) optical fiber cables were installed between the linac control room and the CVCF central network room. These are used for TV monitors used in the machine operation and as spare cables for the OA-LAN and remote PBX network. A backbone network (OA-

LAN) system to the linac and synchrotron from the network center room was upgraded to a Fast Ethernet last year. One output port (FE) of the V-LAN switch (Catalyst-2900) was connected to the New SUBARU facility.

3. Future Plans for the Network

In March or June 2000, when three more buildings are completed at the SPring-8 site, three multi-layer switches will be connected to the SPring-8 main network switch (C5500). To handle the increasing network traffic, a new network system is being discussed: a Fast Ethernet or a Gigabit Ethernet system will be installed throughout the SPring-8 buildings. Virtual-LAN ports will be distributed in the SR building for the beamlines groups. A Gigabit Ethernet will be installed as a network backbone for the main administration building, the SR experimental hall's concentration node (Sub. Electr. room), and new facilities of Harima Riken and JAERI by using single-mode optical fibers. A direct Gigabit connection is also feasible between the beamline experimental hall and a fast processing computer by using an optical patch panel system.

4. CATV System Guest Houses

A CATV system for guest houses was installed in May 1998. SPring-8 SR operation status as seen in the WWW page is broadcasted on the CATV channel 13, by using an NTSC video converter in a personal computer (PC). Guests in the room can watch this channel on TV (Fig. 2.). This PC is located in the guest house center building. Further video information for SPring-8 guests can also be shown on channel 15 or 17 in the future by using, for example, a DVD player.

Three PCs were also set in the guest house center building for guest users to access the Internet. In addition, the users can connect their own PCs to the Internet through an Ethernet connector in each guest room. A private IP address is assigned to each room.

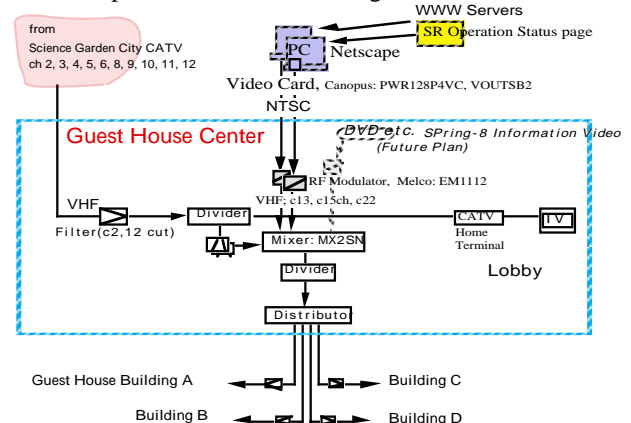


Fig. 2. CATV system for guest houses.

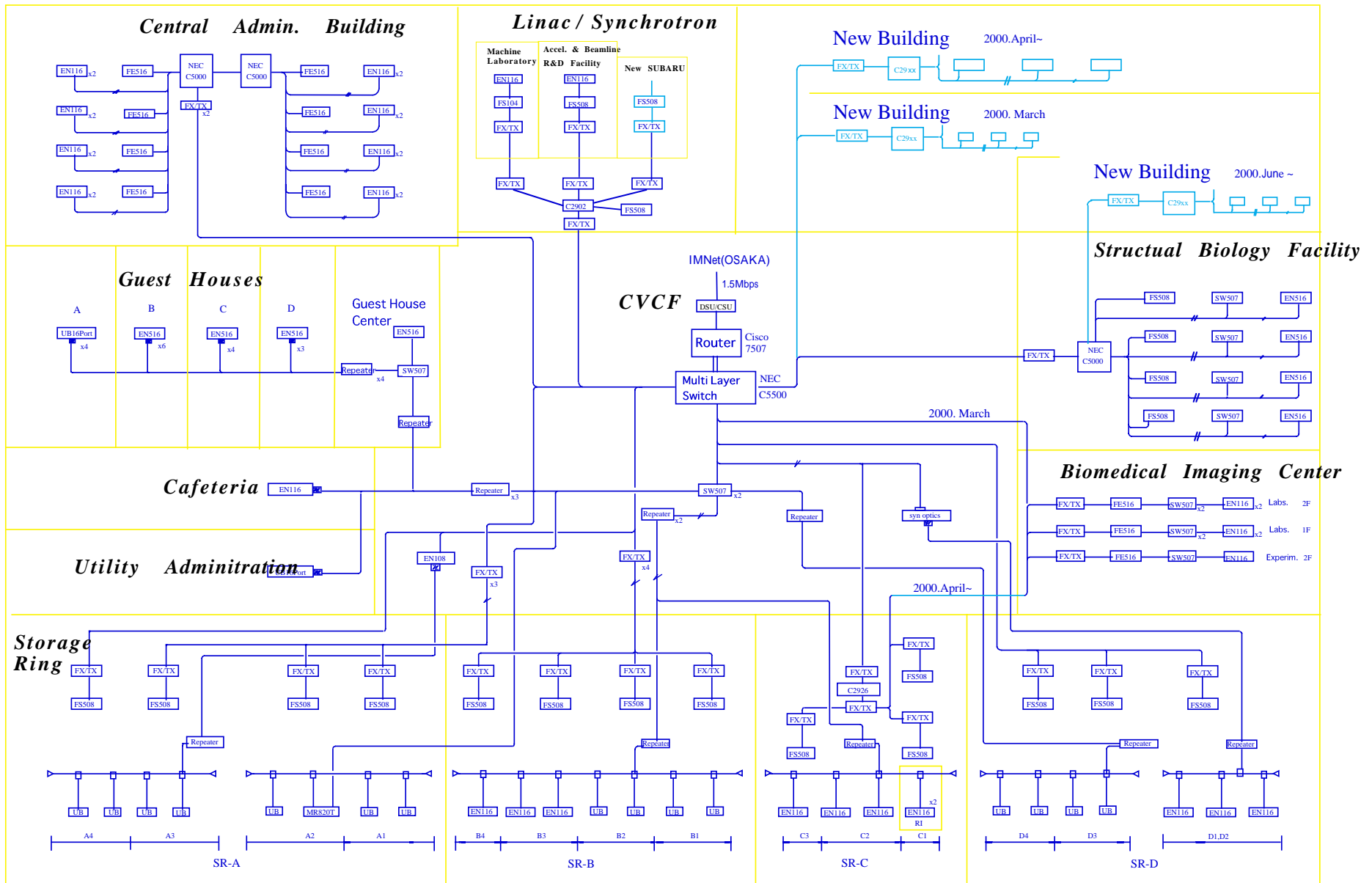


Fig. 1. Spring-8 Network Configuration

5. Web Publication

SPring-8 WWW server provides current information [4] for SPring-8 users and the general public throughout the world as well as in Japan.

5.1 Operation Status

SPring-8 annual operation schedule and the current operation status [5] of SPring-8 SR have been available to the public through SPring-8 homepage.

5.2 Publications

All of the issues from Vol. 1, No. 1, 1996 through Vol. 3, No. 6, 1998 of the Japanese information journal for users, SPring-8 Information are stored in PDF (Portable Document Format) on SPring-8 WWW server. SPring-8 Annual Report 1996 in English is also published in PDF on the WWW server, and SPring-8 Annual Report 1997 is now being edited in PDF. SPring-8 User Guide 1998 in Japanese can be obtained in PDF through the Internet.

5.3 Web Announcements

JASRI called for research proposals for beamtime during the period from November 1998 through June 1999 on SPring-8 WWW homepage and then published the list of accepted proposals there. JASRI advertises for recruitment of office and research workers several times a year on SPring-8 WWW homepage.

5.4 Web Updates

The following web pages have been updated: 1) Overview, 2) Organization, 3) Access Guide and Maps, 4) Synchrotron Radiation Facilities in the world, 5) Links. The pages for User and Conference Information are frequently updated. The SPring-8 telephone directory page was also opened.

5.5 WWW Access Count

The access counter of SPring-8 WWW server recorded nearly 157,000 counts a year.

6. OA Group

JASRI OA group installed groupware on the LAN in JASRI office (the administration sector) to promote office automation. The SPring-8 staff list database on the server is well maintained and serves SPring-8 staff through the groupware and the Internet. Plans call for the groupware to be extended throughout the SPring-8 site. The OA group is preparing for the construction of a work flow system over the groupware and the Intranet as the next step in office automation.

References

[1] Virtual LAN system: CISCO Co., Ltd.

[2] N. Yagi, H. Takebe *et al.*, SPring-8 Annual Report 1997, 136 (1997).

[3] H. Takebe *et al.*, SPring-8 Annual Report 1996, 243 (1996).

[4] <http://www.spring8.or.jp/>

[5] http://www.spring8.or.jp/ENGLISH/status/sr_status2_e.html