PLAN FOR IMPLEMENTATION OF
CHANGE AND REFORM RECOMMENDATION AS.12

I. Introduction

Several Change and Reform recommendations call for a variety of actions related to information technology. In particular, AS.12, reproduced verbatim under III below, calls for central management and maintenance of data communications networks. This document provides a plan for the implementation of recommendation AS.12.

II. Plan for Implementation of Recommendation AS.12

This plan does not address the part of Change and Reform recommendation AS.12 having to do with mail services, i. e. e-mail services. This part of the recommendation will be addressed in other plans, in particular the plan for Change and Reform recommendation AS.09 and by immediate activities to address specific e-mail problems.

Installation of Network Infrastructure

All network installation will be done following the NESB model. This model is compromised of the following components:

- A optic fiber bundle (multi-mode and single mode) to the building, terminating in a Main Distribution Frame (MDF) room in the basement of the building. Fibers in this bundle are used for voice and data and can be used for transmission of video signals.
- A copper voice cable bundle to the MDF room. This cable is already in place in all existing buildings.
- Copper wire and optic fiber facilities and equipment in the MDF room. This includes a wire punch down frame, a fiber patch panel, over-voltage protection equipment, a network switch, etc.
- Vertical fiber runs for data service from the MDF room to Intermediate Distribution Frame (IDF) telephone closets at several locations on the various floors of the building.
- Vertical copper runs for voice service from the MDF room to the IDF telephone closets at several locations on the various floors of the building.
- Copper wire and optic fiber facilities and equipment in the IDF closet. This includes a wire punch down frame, a fiber patch panel, a Category 5 patch panel, network hubs, etc.
- Horizontal runs of Category 3 copper wire from the IDF closet to each room and laboratory for voice telephone service.
- Horizontal runs of Category 5 copper wire from the IDF closet to each room, classroom and laboratory for data service.

For purposes of timing and maintenance and management, all buildings are divided into three classes.

1. The first class includes buildings that are already wired according to the NESB model. No additional work is required in these building and these buildings are ready to come under full central network maintenance and management by the Office of Telecommunications (OTC) and Academic Computing and Networking Services (ACNS). Buildings in this class include:

Allison Hall	ARBL	Braiden Hall
Corbett Hall	Edwards Hall	Ellis Hall
Environmental Health	Equine Repro Lab	Gibbons
Ingersoll Hall	Johnson Hall	Lory Apartments
Morgan Library	NESB	Parmelee Hall
Rockwell	Statistics	Surgical Med Lab
Vocational Education		

2. The second class includes buildings that are wired according to NESB model except that no Category 5 is installed in the building. Since the Category 3 wiring that is installed in the building can be used for data as well a voice, these buildings are ready to come under full central network maintenance and management by OTC and ACNS. Buildings in this class include:

Alumni Center	Cooperative Units	Glover E (OTC)
Green Hall	Guggenheim	Heating Plant
Insectory	Military Annex	Military Sciences
Occupational Therapy	Palmer Center	Potato Virus & Weed R
Spruce Hall	SSA Apartments	Visitors Center
Way W Apartments		

3. The third class includes buildings that require rewiring to conform to the NESB model. Buildings that are to be remodeled must include a wiring installation component in the remodeling budget. New buildings must also include a network installation component in the capital construction budget. All other buildings will be upgraded to the NESB model at OTC and ACNS expense, except for buildings dedicated to auxiliary operations.

Classroom Video Distribution Network

Instructional Services has proposed a new network to distribute video to classrooms. This network is compromised of the following components:

- Head end facilities at Instruction Services in the Clark building.
- Single mode optic fiber connections from the head end to the MDF in each of the buildings served by this network.
- Optical and electronic equipment in each building MDF.

- Coaxial cable connections from the MDF to the classrooms served by this network.

Instructional Services requires a total of $220,000 to implement this proposal over a three year period. The single mode fiber and MDF space required to implement this plan will be provided by OTC.

Central Maintenance and Management of the Network Infrastructure

OTC and ACNS will be responsible for the maintenance and management of the voice and data network in any building that conforms to the NESB model (class 1 above) and in any building that has Category 3 wiring only (class 2 above). This responsibility will extend to the classroom, office or laboratory wall plate jack for both voice and data.

OTC and ACNS response to problems will be two hours maximum, seven days a week, 24 hours a day (7 x 24). ACNS will operate a central dispatch service with a single point of contact for reporting data problems, just as exists today for reporting voice telephone problems. There will be no charge for this service.

OTC response to service orders will be two weeks maximum, and will include services such as activating a new voice or data connection, or moving a voice or data connection. If the service order can be completed with just wire frame or patch panel changes in the IDF closet, then there will be no charge for this service. If OTC must install wiring and a new wall plate jack, then there will be a standard installation charge.

OTC and ACNS will maintain all equipment and facilities in the building MDF room and IDF closets at no charge to the building occupants.

Schedule

OTC can start immediately to work on building data network maintenance and management with existing personnel and the OTC existing general fund allocation. ACNS will require one additional person ($47,243 per year) to assume its role in central maintenance and management of building data networks (Initial Phase).

OTC and ACNS in coordination with Facilities will develop RFP's to obtain bids for the wiring of buildings. These RFP's would specify about 20 buildings to be wired in about a one year period. These RFP's would emphasize quality of work and would require:

- Bids building by building
- One building to be completed before work is started on the next building.
- CSU to provide all parts, materials and equipment

- Punch down of copper by the contractor and fiber termination by OTC
- Bidders to be VARS certified by AT&T
- Separate bids for all building vertical fiber optic cable
- OTC inspection of all contractor work

Based on the level of network use and the condition of existing network wiring, the buildings most in need of new wiring are:

Priority 1	Priority 2	Priority 3
Clark	USC	Gifford
Eddy	Administration	GSB
Aylesworth	Atmospheric Science	Education
Chemistry	Animal Science	Music
Natural Resources	Physiology	ERC
Weber	Pathology	Wagar
Student Services	Microbiology	Shepardson
Admin Annex	Anatomy/Zoology	Plant Science

The cost to upgrade these buildings to the NESB model is estimated to be $1,200,000.

Upon completion of these buildings, a second set of buildings will be selected and bid for new wiring. This process will continue until all buildings in need of wiring are done.

Buildings that are to be remodeled will be scheduled for new wiring as a part of the remodeling schedule.

When approximately half of the buildings at CSU come under central maintenance and management, it will be necessary to add a person ($36,840 per year) in OTC and a second person ($42,980 per year) in ACNS. When ACNS dispatch is converted to 7 x 24 from the current 5 x 24, it will be necessary to add a person ($33,156 per year) and a half-time person ($16,578 per year) to ACNS Operations. These additions are shown in the budget below (Final Phase).

Benefits

The benefits of central installation, maintenance and management of voice and data networks are as follows:

- Bidding will provide the best quality and lowest cost for new wiring in buildings
- Secure and dedicated telephone closets will be established
- Integrity and security of telephone closets will be significantly improved
- Operation of a single LAN technology will improve reliability and reduce maintenance costs

- Enforcement of a campus-wide standard for data networks will be a necessary first step in moving to common network protocols
- Central capacity planning will result in timely and cost-effective upgrading of the data network

Budget Request for AS.12 Plan (includes benefits at 22.8%)

		Initial Phase	Final Phase
OTC FTE	Telecom Specialist		1.0
ACNS FTE	Network Analyst	1.0	1.0
	Network Analyst		1.0
	Operators		1.5
Total FTE		1.0	4.5
OTC Salaries	Telecom Specialist		$36,840
ACNS Salaries	Network Analyst	$47,243	$47,243
	Network Analyst		$42,980
	Operator		$33,156
	Operator		$16,578
Total Salaries		$47,243	$176,797

III. Change and Reform Recommendation AS.12

Issue/Rationale

Campus units are not able to take advantage of potential technology efficiencies because of the lack of a centralized data communications network.

Such an infrastructure currently exists for the telephone network which enables excellent connectivity and efficiencies. Unfortunately, many university wide information systems cannot be implemented because certain departments or units are not effectively connected to the data network either because of incompatibilities or cost. By making these basic resources centrally provided and controlled, campus-wide connectivity would be possible. Care should be taken to allow certain units or departments to establish networks that are compatible yet exceed the university provided connectivity.

Recommendation AS.12

The Vice President for Research and Technology should implement the concept of a university infrastructure for networking in which the basic functions of networking (such as physical wiring, basic network transport and mail services) would be centrally provided and funded.