UMC and UA Gear Up for UMC Cutover

"We are thrilled that UMC has hired nine of our telephone operators to support their new telecommunications system," says University Telecommunications Director Bob Leach. "This means that most of our affected employees will not have to be laid off after all."

In January, nine UA telephone operators were given notice that they would be laid off as a result of UMC's decision to purchase its own telecommunications system. In addition to providing switchboard services for the University, UA operators currently provide emergency medical paging and switchboard services for UMC.

"Since the layoff notification," Leach says "University Telecommunications has been doing everything possible to help the operators find jobs at the UA, UMC, or elsewhere." Operators attended a special career development workshop in April and were given priority time off for job interviews.

"The operators have given us many years of dedicated service and we wish them the best in their new positions at UMC," adds Leach.

The hiring of the operators is only one of the many steps that are being taken in preparation for the UMC cutover to an AT&T System 85 telecommunications system on June 13. UMC is busy installing new telephone sets, training UMC employees, and spreading the word about their new telecommunications system.

University Telecommunications has been assisting UMC in facilitating and coordinating the transition from the UA system to the UMC system. As the June 13 cutover date gets closer, University Telecommunications will begin phasing out its services to UMC. From June 13 to June 18, the UA will continue to provide switchboard and medical paging support in parallel with the new UMC system. "We do not

expect any disruptions in service, but we want to ensure that no one is without telephone service should there be a problem with the new equipment," says Andy Fowler, Director of Information System Services (ISS) in UMC.

On June 19, UMC will fully assume telephone services, switchboard and medical paging support, and equipment repair services.

Also effective on the June 13 cutover date, UMC will have a new telephone prefix, "694." The main number for UMC will be

694-0111

This number will *not* replace 626-0111. Users who dial 626-0111 will continue to reach the UA switchboard and the call will then be routed to the appropriate party in the Arizona Health Sciences Center (AHSC).

UA employees, especially those in AHSC, may be wondering how they will reach UMC employees on the new system. Dewey Wilson, Assistant Director of Telecommunications and Technical Services in ISS, responds, "UA employees will

Networking Gets a Boost

The University Telecommunications department has purchased a site license for MultiNet, software that can economically allow campus VAX/VMS computers to use the TCP/IP protocol and greatly expand their networking on and off campus.

UA departments can obtain copies of MultiNet from the University Telecommunications department for a $100 yearly fee per computer system. This fee will provide telephone support, documentation, and upgrades for the software.

Until now, many campus VAX/VMS computers have been limited to networking only with other VAX/VMS computers. This is because VAX/VMS computers normally use the DECnet protocol, while the majority of networked computers at the UA or elsewhere use the TCP/IP protocol.

With MultiNet, over 50 powerful campus VAX/VMS computers can now be networked for the first time

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with most other computers on the campus-wide network (the extended ethernet), on a large national network (the National Internet), and on international networks.

UA VAX/VMS computers with MultiNet software will be able to network with more than 300 computers presently using the TCP/IP protocol on the UA campus network.

MultiNet will allow users to send and receive mail, transfer files, log into remote systems, and copy remote files. MultiNet will also support the NFS (Network File System) software, which will allow computers to share their disk volumes with other NFS clients.

"MultiNet was extensively tested by the UA's Center for Computing and Information Technology," states Ted Frohling, Network Operations manager of the University Telecommunications department. Frohling reports that MultiNet was judged as better than its competition, as a good value, and as an excellent match for the UA's networking needs.

Frohling says the UA has permission to use most of MultiNet's source code, with which additional capabilities can be tailored for individual users.

"Another great benefit of a site license for such effective software," adds Frohling, "is that as more and more users have MultiNet, support for it will become more efficient, which will mean even quicker recovery from problems—less downtime."

University Telecommunications has put together a *MultiNet TCP/IP and NFS Site License Software Request Packet.* This packet includes a handout for MultiNet and the necessary forms for requesting the software. The handout provides a

brief technical description of Multi-Net, its system requirements, the procedure for obtaining it, user support information, and a copy of relevant sections of the site license agreement.

To obtain the MultiNet request packet, or ask questions about MultiNet, please call Network Operations at 621-4501 or send an electronic mail message to *brett@zippy.telcom.arizona.edu.* Please include your campus mailing address with the request.

News Briefs...

Online Information about the UA

With the help of other UA departments, University Telecommunications has completed a pilot of Videotex, a program that will allow you to access University-related information via a computer terminal. Potential topics include: UA calendar of events, contact information about departments, individual college activities, services offered by campus organizations, and so on. University Telecommunications is tentatively planning to offer Videotex to the campus at large this fall.

NeXT Authorized Service Center on Campus

Equipment and Maintenance Services in the University Telecommunications department now offers authorized warranty and maintenance services for NeXT computer systems. University users can obtain prompt repair services right on campus from an experienced technician trained by NeXT. Equipment and Maintenance Services also offers yearly maintenance contracts for NeXT equipment, as they do for most brands of

microcomputers, terminals, printers, and peripherals. Call 621-5050 for details.

BITNET and CSNET to Merge as ONEnet

In April, the Board of Trustees from BITNET (Because It's Time NETwork) and CSNET (Computer Science NETwork) voted unanimously to merge the two networks. BITNET and CSNET are international networks that allow computer users to communicate electronically with other computer users connected to the network.

The purpose of the merger is to foster increased information exchange among academic, government, and private industrial communities. The merged network will be called ONEnet (pending a trademark search) and is scheduled to be incorporated this July with an initial ten-member board. A transition team with members from both networks is working on the merger details (e.g., bylaws, policy manual, and funding). In January 1990, the current members of BITNET or CSNET (or both) will automatically become members of ONEnet.

Telecommunications Services Directory

Customer Service Orders (Data/Telephone Lines)	1-5100
Network Control Center (24-Hour Data/Telephone Trouble Reports)	1-7999
Billing Inquiries	1-5100
Telex/Telegrams	1-3030
PC/Terminal Maintenance and Paging Services	1-5050
TIPS Hotline/Help	1-TIPS

Fiber Optics: The Light at the End of the Tunnel

What is fiber optic cabling? How does it work? My building is one of the 80 buildings that will be served by the new fiber optic system; what does this mean?

These are some of the frequently asked questions that we have received on the 621-TIPS hotline/help number. This article provides the answers and defines the role that the fiber cable plant will play in future network interconnections at the UA.

Fiber optic cable differs from copper wire in that information is transmitted using light rather than electricity. Fiber optic cables are immune to electromagnetic interference and have the capacity to transport high volumes of data reliably over long distances. A single fiber optic cable will often contain a number of small optical fibers each capable of passing a separate signal.
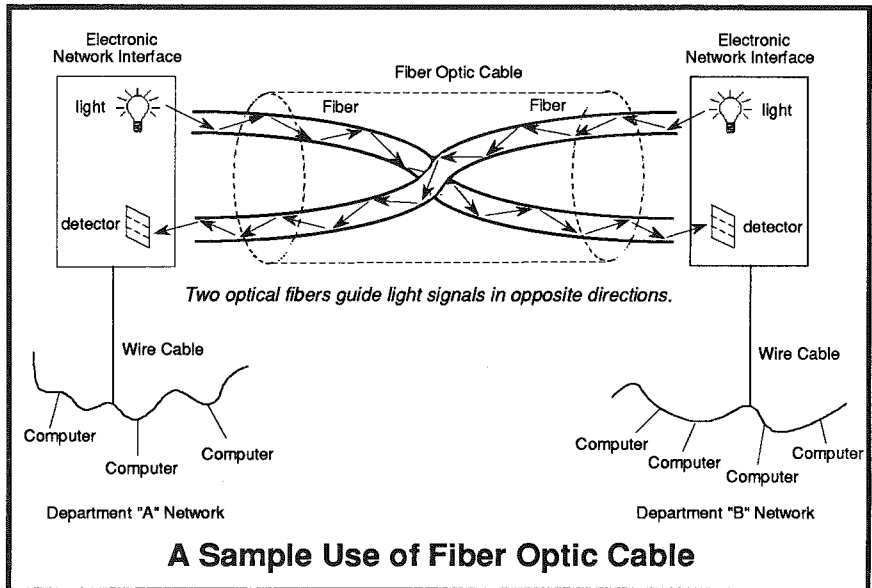
Light travels in straight lines, although it may be reflected by surfaces or bent by lenses. A single fiber in a cable can be thought of as a pipe lined with mirrors. Each ray of light travels down the inner core of a fiber until it reaches the side of the fiber and is bent back along a new path leading down the fiber, finally emerging at the far end of the cable. The cable can be bent within certain limits, and the internal reflections will continue to pass light along the fibers. The light signal is pulsed or varied in such a fashion as to pass information between the two locations.

Information is transferred over a fiber optic cable using electronic network interface devices located at both ends of the cable (see diagram). These devices typically require two optical fibers: one for light being transmitted, and another for light being received. This single pair of fibers can be used to transfer information between many computers that are connected to the interface devices

at the ends of the cable. The campus ethernet is presently operating over a single pair of fibers running to each of ten active buildings.

Eighty buildings are receiving fiber optic cable, as part of TIPS, so that fiber will be available when needed for future communication needs.

Two optical fibers guide light signals in opposite directions.

A Sample Use of Fiber Optic Cable

This approach is quite similar to how copper wire cables have been managed in the past: as needs arise, wire can often be used from existing cables without incurring the large expense of running new special purpose cables across campus.

The fiber cable system being installed has been designed to serve present and future campus applications that

require fiber optic technology. Expected uses in the future include: expansion of the existing ten-building campus extended ethernet, implementation of a high-speed backbone network, and increased access by departments to both on-campus and off-campus computers. As connectivity between computers

increases, so will connectivity between individuals. This may be in the form of electronic mail transfer, access to information databases in other states, access to common data, and access to special resources not present locally.

Future network interconnections will be enhanced by the establishment of the fiber plant on campus today.

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call UMC employees by dialing a '4' instead of a '6' before the extension. UMC employees will continue to be able to call UA employees by dialing a '1' or a '6' before the extension."

Fowler adds, "Calls from UA phones can be transferred or forwarded to UMC phones using the same codes or

function keys that are currently used. We want to make this cutover as transparent as possible for everyone."

UMC's new telecommunications system will be managed by the ISS department, states Fowler. If you have any questions about the new system, please call ISS at 626-6417 (after June 12, call 694-6417).

TIPS Q & A

This column is featured each month in *Telecom News*. It provides answers to frequently asked questions about the TIPS project. If you have any questions, please call 621-TIPS (621-8477), Monday through Friday, 9 a.m. to 4 p.m.

Q. Will existing data modems work on the new system?

A. Yes.

Q. How long will the digging on campus last?

A. The conduit construction portion of TIPS is winding down. Four phases of the project have been completed. A fifth phase is expected to be completed by the end of June.

Q. Are we getting new telephones?

A. There will be no need to replace single-line telephone sets. ECTS sets (multi-line electronic telephone equipment) will be replaced with new electronic telephone sets. The new sets will be provided to current ECTS users at no charge. Although currently leased AT&T key systems (Merlins and Spirits) will work on the new #5ESS system, we plan to offer University-owned replacement systems when individual equipment leases expire. Details concerning key system replacement will be discussed with departments.

New Telecom Personnel

Susan Faulkner - Susan has joined the TIPS project staff as a Telephone Services Coordinator. She brings 13 years experience with Mountain Bell to her new position.

Aaron Leonard - Aaron has transferred from the CCIT Systems group to Network Operations as a Computer Software Specialist. His VAX/VMS systems management expertise will be used in managing Telecommunications computers and in growth planning for the campus ethernet.

Christina Scavo - Christina is providing secretarial and customer service support for University Telecommunications. She recently received a B.S. degree in Business Administration from the UA.

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