

. . . academic networks

. . . without IBM support

source of funds, at least for 1988.

One obvious area for improvement is in EARN's carrying capacity. European researchers are envious of the new US network NSFnet operating at 1.544 megabits a second. In Europe, Jennings says there are "no plans" to upgrade EARN beyond 64,000 b.p.s.

One of EARN's most important tasks in the transition is to tell whether demand justifies such massive increases in capacity. In some fields, such as computer-aided design, the need already exists; but in areas like the humanities demand will depend on how well EARN can sell itself.

Steven Dickman

Munich: Expensive survival

THE prospect of IBM's withdrawal as a supporter of BITNET has dramatically drawn attention to the high cost of long distance communications in West Germany. Because of a new volume-based tariff structure for international leased data lines, the European network EARN plans to shift as many lines as possible out of West Germany. But two of eleven *Länder* plan to underwrite the cost of data transmission for research.

The dispute over tariff policy concerns five EARN lines terminating in West Germany. Since the partners sharing the lines also share the cost, the effective 100 to 500 per cent increase in price makes them unattractive. EARN director Dennis Jennings calls the tariff policy "quite outrageous". West German EARN director Michael Hebgren, of the University of Heidelberg, agrees. He says all the lines may have to be cut if the ministry does not change its policy. Others believe that, while the new policy may cause problems, academic network links will not be cut.

The postal ministry defends the high tariffs by citing the high quality of the West German telecommunications network. Based on the "equal treatment principle", it also says that scientists should be no more entitled to lower rates than anyone else. But the postal ministry's argument that researchers should look elsewhere if they want cheaper service seems cynical in the light of its effective monopoly.

Eventually, federal and state governments may step in to help. There is a two-year-old computer investment programme that may be a model for joint financing, according to Alfred Kupllmer from the Deutsche Forschungsgemeinschaft (DFG). The immediate problem is to take over from IBM the costs of the lines leading to the 24 computers (out of a total of 170) forming the "backbone" of the West German network. With federal and state help, West German researchers are

unlikely to suffer much from IBM's withdrawal. Steven Dickman

Washington: Networks multiply

COMPARED to Europe, US computer networks have it easy. Competition in the telecommunications industry in the aftermath of the break-up of AT&T (American Telephone and Telegraph) has produced an overcapacity of high-speed data lines, and therefore nominal transmission costs. US networks have also become more used to being self-supporting.

That being said, all is not plain sailing for networks in the United States. A national debate is under way over who should pay for a 'backbone' for NSFnet, a national research network just starting to operate. At present, NSFnet is moving about 60 million packets a month through its six-node backbone to its collection of regional networks, campus networks and supercomputer centres. Some argue that NSF should include a line item in its budget to pay for the system, but others would prefer that it be supported as part of the indirect cost of research grants. Another possibility is for the regional networks themselves to pay for the backbone through revenue from their members.

The popularity of networks in the United States has created its own set of problems. Different protocols and communications standards has created the potential for a Tower of Babel, making network interconnectivity a nightmare.

A development expected shortly should help to rationalize some of the problems in sideways communications among networks. BITNET will be merging with CSNET. Both have been popular with the research community, and both are self-supporting from user contributions. CSNET began as a network for computer sciences, and BITNET began life as a general academic network.

Congress has requested that the federal government come up with a plan for the future of scientific computing in the United States. That report has now been essentially completed, is under review within the White House, and should be delivered to Congress later this year.

Joseph Palca

London: EARN poor relation

NEGOTIATIONS are proceeding in Britain over the fine print in a formula for a new funding arrangement for the EARN computer network. Britain has agreed to share the costs of the system with other European users, to the tune of £35,000, which would cover the cost of the leased telephone line to CERN in Geneva as well as a proportion of the satellite link between Montpellier and New York. British network users will also

need to find another £35,000 to cover staffing and overheads.

A formula has been hammered out calling for major funding bodies, such as research councils, to pay a proportion of the costs based on their use of the network over the last six months. Each user group within the research councils would be assessed under an arrangement that EARN's director in Britain, Paul Bryant, admits is "a bit rough" since it is based on machine time rather than individual users.

Provided the research bodies agree to pay a proportion of the computer network's costs, the new funding arrangement should make no difference to British scientists who use the network. If any of the groups refuse to join in, their members will not be able to take part in the network.

The funding formula has won the approval of the Computer Board for Universities and Research Councils, which finances computers in universities. Individual universities within the EARN network will meet to discuss the new formula in November, but it is considered they have no option but to agree. A new funding strategy is under consideration for 1989, when the European network will change to a more modern design.

EARN has not taken off in Britain the way it has in some other countries, partly due to an initial fear that it would undermine the local Joint Academic Network, JANET, and partly because EARN uses older and therefore less attractive technology.

Kathy Johnston

Paris: REUNIR ready

FRANCE'S academic computer network will still function next year when IBM ceases paying for its leased telephone lines through EARN. One of the first countries to be involved with EARN, France has recently become a major link in the network with the choice of CNUSC, the national computing centre at the University of Montpellier, as the site for the European high-speed satellite link to BITNET at the City University of New York.

With the withdrawal of IBM funding for EARN, France's major national academic network, REUNIR, will take over a large share of the financial responsibility. Costs will be split jointly between individual sites (universities and research centres), who will pay a subscription towards running costs, and REUNIR itself, which will pay for global fixed costs, such as renting the data lines. REUNIR's budget comes out of the annual computing budgets of its founder-members, the state-funded research organizations.

A spokesman for REUNIR explained that IBM's funding of EARN played a significant pump-priming role and has enabled the networking infrastructure to develop in France, showing that there was a "considerable need" for such a service.

Peter Coles