

Computer scientists face an anxious future

SCIENTISTS working on the **Alvey programme** of research into advanced computing are anxious about their future. The five-year programme has two more years to run, but early projects are now drawing to a close, with decisions on a follow-on scheme yet to be taken.

The government has appointed a committee, headed by Sir Austin Bide, to make recommendations on a successor to Alvey. But the so-called IT 86 committee, due to report in October, seems to have its sights set on market-orientated support aimed at transferring Alvey technology to its eventual users.

"We propose funding should be supplied to users of IT," Nigel Home, a member of the Bide committee, told Alvey's second annual conference at the University of Sussex last week. Although there will be continuing support for basic research, it will be at a lower level.

Some fear that there will be too big a gap between the existing projects and those that might be created in the future. "It is up to the IT 86 committee to have a bridge to the previous programme. At the moment there is a danger of discontinuity," claimed Keith Warren, technical director of Plessey.

There are now some 2200 researchers from industry and academia working together on Alvey projects but their numbers will begin to fall off by the end of this year. Many of the 600 university people engaged on the projects are concerned that they will be unable to continue their work for lack of funds.

"We are only too conscious there is a very brief window when a very large part of the [research] community will require added finance," said Tony Egginton, director of engineering at the **Science and Engineering Research Council (SERC)**.

Egginton revealed that the SERC had already turned down six applicants in the latest round of Alvey grants, because the cupboard was bare.

"We've already reached a situation where we have a large number of A+ [top level] programmes that can't be funded. How do we keep our teams together?" asked Jim Howe, professor of artificial intelligence at Edinburgh University. "The only solution I can think of is we will have to look for funds in America and Japan."

Brian Oakley, director of the Alvey programme, fired a warning shot across the government's bows: "Cooperation between industry and university is something of unique value that must not be allowed to wither away," he said. "If SERC can keep up its level of funding, I hope that industry will contribute too."

The man in the hot seat, **Geoffrey Pattie**,

John Lamb

minister for information technology, sat in on most of the opening day's discussion. **He was at pains** to reassure the workers on Alvey projects that the government would act by the end of the year on Bide and that the "key point" was not to allow any discontinuity.

He was also anxious to correct the impression that the government would favour European collaboration over the home-grown variety. "I do not regard support for international collaboration as a

bad cold, invites callers to ask about trains between London and Aberdeen. The system involves a tricky bit of programming, since it must not only recognise what is said to it, but apply a set of rules to the information it gleans from callers.

Apart from taking no notice of the fact that it was being asked about elephant rather than train times, Vodis got itself into a jam over the sequence of destinations, days and train times. Finally, it had to revert to asking questions which invited yes or no answers. But British Telecom will

persevere with Vodis, because systems like this, once they operate reliably, could be used to automate many of the information services presently supplied by telephone operators.

Voice recognition is part of what is commonly called the man-machine interface—the technologies involved in communications between people and machines. Britain has failed to keep up in this field, and the Alvey Directorate is trying to put this right. Its latest move is to spend about £1 million on setting up two centres at London and Loughborough universities.

The centres are charged with the task of helping industry to develop computer systems more fitted to the way people do things. A similar centre involving collaboration between Glasgow and Strathclyde Universities has already been set up.

These "human factors" centres will advise industry on the best way to design software, screens and keyboards. Teams at all three places will also work on developing their own systems.

Although the Alvey programme has not revived British fortunes in the information technology business yet, there are signs of success, said Oakley. He pointed to the export successes of companies which produce instruments used in chip-making as one hopeful sign. □



Brian Oakley (left), head of the Alvey directorate, and Geoffrey Pattie (right), minister for information technology. Pattie is reassuring about the future of scientists involved in the Alvey project

substitute for supporting research and development at home," said Pattie, who for the next six months is chairman of the **European Council of Research Ministers**. But Bide said he was keen to "sharpen the focus on Europe".

Despite all the arguments about money and research policy, there was concrete evidence of the progress of Alvey projects. Some of the 187 organisations involved in Alvey showed off their work in an exhibition that was part of the conference.

A group led by **British Telecom** clearly had some way to go with its project on voice recognition. The idea is to develop a system for responding to telephone enquiries about train times. The Vodis computer, sounding like a man with a very

Lubrication for arthritic joints

A TEAM of doctors at Lithuania's Institute of Experimental and Clinical Medicine has developed a method for restoring lubrication to arthritic joints.

Natural synovial fluid found in healthy joints contains hyaluronic acid which has very large molecules. When a joint is compressed, the molecules join together to form a tough, rubbery partition between the bones. The water in the fluid is temporarily absorbed by the cartilage covering the bones.

In arthritic joints, this fluid also dries up causing further deterioration and pain. The

team in the Soviet Union led by V. Vasilenkaitis, uses a preparation of polyvinyl pyrrolidone and water. Five or six injections into the joint, repeated once or twice a year, restores normal lubrication.

A small syringe implanted in the joint space can be controlled from outside the body by a magnet. When moved along the affected limb, the magnet causes a piston in the syringe to compress and release the lubricant into the joint. The syringe is refilled by puncturing the skin with a second syringe guided by X-rays or ultrasound. □