Information technology
Europe's bid to catch up

Brussels

THE European Commission's research officials holding their breath as the time approaches for launching the Community's most ambitious research project yet — the Esprit programme of research and development in information technology. By the deadline for the submission of proposals late in February, nearly 200 specific proposals had come from all member states with a total combined cost of 110 million European Currency Units (ECU) (1 ECU = £0.55). Member governments will consider the proposals at a research council meeting later this month and again at a meeting in October.

The immediate issue is the "pilot phase" of the Esprit programme, when there will be 15 one-year research projects ranging from advanced microelectronics to software technology, advanced information processing, office automation and computer integrated manufacturing. A sixteenth project will be aimed at improving the exchange of information between the participants.

Commission officials note that applications for the pilot phase come from all member states and that 620 separate organizations are involved (some of them more than once) in the applications. The Commission is hoping that the outcome of the pilot phase will persuade governments to give the go-ahead for the first of two five-year operational phases at a cost of 1,500 million ECU.

The Commission is confident that it will succeed, partly because the project was first suggested in 1982 by the 12 principal electronics companies in the Community and partly because the pilot phase and the subsequent steps have been planned in close collaboration with about a hundred speculators from industry, universities and research institutes in Europe. Earlier this year, the electronics companies told the Commissioner for Research and Industry, Vicomte Etienne Davignon, that unless a cooperative industrial programme could be mounted on a sufficient scale, "most if not all of the information technology industry could disappear in a few years".

Financially, the electronics industry is prepared to back the project with its own funds. It will provide at least 50 per cent of the total cost of Esprit research and development, not less than 1,500 million ECU for the 10-year operational phase and 11.5 million for the pilot phase.

Even the pinchpenny governments of the Community agree on the need for action. The Commission calculates that while the Community's trade balance in information technology was level in 1975, it showed a $5,000 million deficit in 1981 and twice as much in 1982. Now, the Commission says, Community-based industry supplies less than half of the European market in information technology, which itself accounts for 34 per cent of a world market estimated to be worth $237,000 million in 1980. With the world market expected to reach $500,000 million a year by 1990 (at 1980 prices), the Commission thinks that "the identity of Europe and its political independence" is at stake.

At the same time, the Commission admits the Esprit programme is small compared with the present rate of research and development expenditure in Europe in information technology, estimated at $5,000 million a year, and with the investment of the largest US companies, now spending individually $2,000 million a year on research and development. The Commission also notes that corporate joint ventures such as the semiconductor research cooperative have been actively encouraged by the Reagan Administration's Economic Recovery Tax Act. And, inevitably, the Japanese investment of $500 million on a fifth-generation computer programme is a spur.

Even so, Davignon considers that Esprit will stimulate strategic thinking and a growth of confidence. The Commission's view is that in Europe there is insufficient multidisciplinary research, too large a gap between university and industrial research and a mismatch between the skills of university graduates and the needs of industry.

European industry, while welcoming the Esprit programme, has a number of particular concerns. Thus a source at Philips (Netherlands) emphasizes the need for access to research results and good management on the programme. The Commission has decided that the ownership of the right to exploit new information will normally rest with its contractors but that teams working on other Esprit projects should have privileged access to research results.

On management, the Commission plans a management committee (representing member states), consultations with industry and also to use the pilot phase as a means of testing different ways of managing the full programme.

The big question still undecided is whether governments will in the end agree to contribute 1,500 million ECU — a sum expected to come as something of a surprise some of the larger member states with extensive research programmes of their own. There may also be difficulties about the Commission's plan to assume overall responsibility for the programme, depriving governments of their supervisory powers. But one Commission official said that "time is running out" and that the scale of the programme "merely reflects the extent to which we lag behind".

Geert Linnebank

UK computing
Half-hearted sponsorship?

MR Brian Oakley, who took charge of the Department of Industry's new unit for promoting computer developments on 1 June, stresses that the directorate will adopt a flexible approach in deciding what areas of advanced information technology to support. The new unit, known as the Alvey directorate, will coordinate a £350 million research programme. Some £50 million of this will be spent in academic institutions. but some features of the scheme have been criticized by the industry.

Mr Patrick Jenkin, Secretary of State for Industry, announced the government's response to the Alvey report at the end of April (see *Nature* 5 May, p.2). The Alvey committee, set up by the Department of Industry to ponder how to help British industry to compete successfully in computer technology, had reported last year. The government agreed to set up the directorate with a 5-year programme to develop key areas in the field of advanced information technology, and provided a total of £200 million to support it. Industry will, it is hoped, provide a further £150 million.

The chief departure from Alvey's recommendations is that the government's contribution to any one research project will be limited to 50 per cent of the total cost. Alvey sugested 50-90 per cent.

Oakley says that requiring industry to bear half the cost of a project (as in the Esprit programme) ensures it "means business"; small companies should be able to keep up if they pool their efforts at the pre-competitive stage of development. He acknowledges the difficulty of encouraging cooperation, especially since there is a shortage of top experts in the industry. For this reason he is committed to improving education in information technology. The Alvey committee, of which Oakley was a member, pointed out that simply putting a microcomputer in every school will only breed a generation of poor BASIC programmers. Part of the government's contribution to the Alvey programme is earmarked for education but the details have yet to be settled. Oakley, previously secretary of the Science and Engineering Research Council, is determined that it will be used effectively.

Mr David Fairbairn, director of the National Computing Centre Limited, has welcomed the programme but expressed some reservations. He says that the 50 per cent maximum subsidy is adequate in fields where the first developer can expect the lion's share of the profits, but in areas which cannot easily be protected by patent (such as software development) the incentive may not be sufficient. Fairbairn also feels the programme fails to put enough weight on bringing technologies to the market.

Tim Beardsley