European information technology

Only one dog left in manger

Brussels

WEST Germany will agree to contribute its share towards Esprit, the £1,000 million Brussels-inspired European research programme on information technology, at a meeting of research ministers later this month. So, at least, European Commission sources believe after the visit to Bonn by research commissioner Etienne Davignon two weeks ago.

In the past six months, Britain and West Germany together having been blocking progress on the project pending a wider European agreement on the budgetary problems of the European Communities. But now, it seems, Britain may be the only obstacle.

According to Brussels, West German opposition was limited to tying a release of Esprit funds to an offsetting reduction of the whole Brussels research budget (which is dominated by energy, including nuclear fusion). But, it seems, Bonn has been convinced that such a move would be counter-productive: the Brussels research directorate has recently been putting its house in order, and, Davignon argues, is ready to take on more work.

Thus, with West Germany ostensibly out of the way, Davignon is turning all his attention to Britain where the nut will certainly be harder to crack. Not only has the United Kingdom set up its own information technology programme under the Alvey directorate (on a scale roughly equivalent to what Britain might get out of Esprit), but the British Prime Minister insists on a complete solution to the European budget issue before new spending is approved. Davignon seeks to tackle this policy at its source.

Ironically, the Esprit sums for 1984 are already written into the current Brussels budget, but cannot be released until the ministers agree. Frustrated, the Commission is already unofficially preparing the official "call for tenders" that would follow ministerial approval. The hope is that after 28 February (when research ministers will meet in Brussels) the Esprit motor will be warmed up and running, just waiting to leap off the grid in its race against Japan and the United States.

Meanwhile, the European Commission has managed to get at least one new technology project under way: an eight-laboratory effort, costing £1 million, to produce the semblance of a working, optical computer within two years.

Esprit, although considered advanced and pre-competitive by industry, does not include "optronics", considered by some as the real future of computing and by others as a mere dream. But Esprit has now been all but taken over by the Brussels industry directorate, leaving the research directorate to look further ahead.

This it certainly has done. One goal of optronics is a thousandfold increase in computing speeds (to picosecond rather than nanosecond switching times) but there is at present no demonstrable read-write memory or clock working at these rates. But the optronics programme, which has been under way for little more than a month, will put Europe ahead of the United States and Japan in these fields, according to one of its co-directors, theorist Dr P. Mandel of the University of Brussels.

The eight groups involved, at Heriot-Watt University (Glasgow) (where Dr S.D. Smith is director of the experimental part of the European project), Milan, Pisa, Strasbourg, Frankfurt, Freibourg, Munich and Brussels, knew of one another before the Commission programme was mooted, but they are now working together with a will, claims Mandel. **Robert Walgate**

UK data protection

Reservations over data bill

THE British Government's Data Protection Bill successfully ran the gauntlet of its second reading debate in the House of Commons last week, despite Labour opposition and public reservations by several professional bodies.

The bill, which has been controversial from the start (see *Nature* **302**, 641; 1983), sets out to prevent the abuse of personal information held in machine-readable form so as to allow Britain to ratify the Council of Europe's convention on data protection. But many fear that the vague terms employed in the bill and the wide scope of its exemptions from this laudable aim will make it a burden on companies which would be required to register as "data users" while providing no worthwhile protection to people about whom data are held, "data subjects" as they are called.

Soviet computing

Aleksandrov urges speed

ATTEMPTS to computerize the Soviet economy could turn out to involve "vast and futile expenditure", Academician Anatolii P. Aleksandrov, president of the Soviet Academy of Sciences, has been warning. Writing in *Izvestiya,* Aleksandrov alleges that the Soviet Union is failing to make proper use of "even the comparatively small amount of computer equipment" that it manufactures.

The main bottleneck, according to Aleksandrov, is the shortage of trained personnel in the Soviet Union and a lack of awareness of the potential of computers among the population at large; overcoming these deficiencies will be a task comparable with "eleminating illiteracy" after the revolution.

Aleksandrov's article is ostensibly a call for a massive training programme, with the necessary computer manuals produced "before 1985", tuition in computer sciences (already partially implemented in tertiary education) at the secondary level and salary incentives for employees who complete computer familiarization courses.

Computers and automation equipment, Aleksandrov urges, must be "highly reliable", with at least 3-5 years of "trouble-free working". Accidental power failures, he said, should not lead to loss of information or to damage.

The situation with software is more complicated. The introduction of computers into the Soviet economy has taken place piecemeal, so that the various designers and ministries have produced equipment which, although "quite good for its time", is incompatible in software and components.

The need therefore is for a major overhaul of the Soviet computer industry so that all future hardware and software would be compatible. The logistical implications of such a revision of plans would be considerable — particularly in the Soviet context, where quarterly, annual and quinquennial production targets make no allowances for retooling or changes of production lines. If a switch to fully compatible hardware and software is decided, the planners will be hard pressed to incorporate it into the directives for the 1986–1990 five year plan.

The technical quality of existing Soviet software, to judge from Aleksandrov's remarks, is not entirely satisfactory. Existing tasks in the software sphere, he says, include the adaptation of software to automatic search systems and the protection of software against distortion due to voltage or frequency fluctuations, electromagnetic interference and the like.

For Aleksandrov, however, the task is clearly that of education. His programme for computer education (if the comparison with the literacy campaign of the 1920s has any real meaning) would embrace about half the population of the Soviet Union. Such a programme would itself require a major coordinated effort and, according to Aleksandrov, even the production of computer education manuals ("before 1985") must be preceded by work by the State Committee for Science and Technology, the Academy of Sciences, all ministries manufacturing computer equipment and automation facilities and the ministries of higher and secondary education, in order to "integrate" the available technical resources and software. **Vera Rich**

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The several amendments agreed by the House of Lords have not been enough to satisfy the critics. Holders of personal data stored in machine-readable form — subject to certain exemptions — would be required to register with a new Data Protection Registrar, who would keep records on the sort of information being held. (Personal data, as defined in the bill, include expressions of opinion about individuals but not indications of data users' intentions regarding those individuals.) Data subjects — subject to further exemptions — would be allowed access to information held about them and would be entitled to demand that any inaccuracies be corrected. Data users, for their part, would in general be prevented from unauthorized disclosure of personal information — again, subject to exemptions.

It is the exceptions to the general principles of the bill that arouse anger. The main concern of the British Medical Association is that computerized medical records would, if the bill became law, have to be registered, presumably by the health authorities, whose representatives — including non-medically qualified personnel — would then be empowered to pass on such records either to the police or to the Inland Revenue. The medical profession considers this quite unacceptable.

The British Medical Association (BMA) and a medical inter-professional working group on personal information have been negotiating with the Department of Health to find a solution to the problem. The department has offered some concessions based on voluntary codes that would in any case apply only while records were within its purview. BMA and the working party want medical records to be specifically exempted from the general provisions of the bill so that they could only ever be disclosed to an outside authority on the order of a crown court judge. At the same time the bill must not interfere with epidemiological research.

An earlier blanket exemption from the bill's subject access provisions and prohibitions on disclosure for data relating to immigration control has now been dropped, but it seems that the Home Secretary retains the power to exempt much government-held data from subject access "if they appear to him to be of such a nature that their confidentiality ought to be preserved". Universities are worried about the possibility of having to hand over their students' academic records on demand. And although data subjects who do manage to establish that inaccurate information about them is being held do not now have to prove damage in order to be awarded compensation, this does not apply if the data are improperly disclosed, a surprising omission picked up by Liberal Member of Parliament Mr Simon Hughes.

Quite apart from these sensitive issues, many fear that the proposed system for control of computerized personal data would be quite unworkable. The Data Protection Registrar would probably have a staff of about 20; the number of data users who would have to register would be of the order of hundreds of thousands, many of them holding entirely innocuous information. The definitions in the bill are so vague that it is unclear whether many computer systems will be required to be registered or not. The bill contains no detailed guidelines or codes of practice to help data users, and some Members of Parliament have suggested simple devices that would enable the letter of the bill to be complied with while breaking its spirit — for example, maintaining different (but unlabelled) lists for (say) creditworthy and uncreditworthy customers.

Those who defend the bill point out that as there is now no protection against the abuse of personal data in British law, the bill must at least be an improvement. But this would be to forget that once an important bill becomes law, major modifications are unlikely to be made for some years afterwards. Liberal and Social Democrat Members of Parliament who voted for the bill say they will be pressing for further changes in the committee stage. But the committee will be very limited in the expert opinion on which it will be able to call, and a Labour move to put the bill before a special standing committee was heavily defeated. However, the Home Secretary appears willing to accept that further modifications to the bill will be necessary.

Tim Beardsley

Fast reactors

Anglo-French accord at last

THE British and French electricity utilities have agreed on an outline programme of fast reactor development.

Sir Walter Marshall for the Central Electricity Generating Board (CEGB) and M. Jean Guilhamon for Electricité de France (EDF) signed a document on Tuesday which "sets out principles for long-term cooperation" covering the joint construction of fast reactors. According to CEGB, the first such joint reactor would be built in France, while the locations of future stations have yet to be decided.

In the short term, this implies CEGB support for the building of Superphénix II, a putative successor to the 1,300 MW Superphénix I now nearing completion near Avignon. Previously, EDF has shown itself cool to the Superphénix II project because of its probable cost (about twice that of an equivalent pressurized water reactor (PWR)).

Sir Walter Marshall said on Monday that the CEGB contribution to a Superphénix II would be "neither large nor trivial", and certainly more than 16 per cent. CEGB would receive electricity and revenues in proportion.

Assuming this more advanced reactor would cost no more than 40 per cent more than an equivalent PWR, the electricity so bought by CEGB would be cheaper than electricity made by burning coal in the United Kingdom, said Sir Walter.

According to M. Guilhamon, EDF is aiming to start Superphénix II in 1986. "Breeders are easier to operate than PWRs" said Guilhamon. Breeder operators suffer less exposure to radiation, and the thermal inertia of the sodium cooling circuit offers greater protection against accident, Guilhamon claimed. The sodium is unpressurized, and normally runs at 500°C; but it must reach 1,000°C before it boils. The water in a PWR, however, is superheated. This gives a PWR a 20 minutes safety margin but a fast breeder reactor two hours, he claimed.

Sir Walter would be happy to see just one British demonstration fast reactor before 1997 (his retirement date), he said. The main constraint was not cost but the "exhausting" prospect of a public inquiry probably longer and larger than the current Sizewell inquiry into the proposed British PWR. This has been "psychologically very difficult" said Sir Walter. Sizewell must be well out of the way before another such inquiry were contemplated.

Meanwhile, further agreements between British and continental agencies are expected, following the outline inter-state agreement on fast reactor cooperation signed in January. One between the UK Atomic Energy Authority (UKAEA) and its European partners is taking longer than promised — but as this shares out the research among signatories, and as research is the main component of fast reactor work at present, the delay is not surprising. A UKAEA spokesman pointed out wryly that while the CEGB–EDF agreement was between only two agencies, the research agreement involves several in a number of countries.

In fact, some years ago UKAEA had been seeking just such a bilateral agreement — but with the United States rather than France. The authority hoped that the trouble over federal support for the Clinch River project would lead the United States to fall into the arms of a British collaboration; but the US fast breeder programme was finally seen to be so confused and irretrievable that the decision was made to join in with Europe.

It may be considered significant that Sir Walter Marshall, who as the then chairman of UKAEA was behind the approach to the United States, has now also concluded a bipartisan agreement (though this time with France) as chairman of CEGB. Sir Walter approves of clarity, and it may have been against his taste to negotiate with a plethora of European agencies (as are involved in the existing European consortium behind Superphénix I).

Robert Walgate

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