Paris computer centre

Orsay protests

The *Université de Paris-Sud* at Orsay, one of the principal centres of physics in France, has withdrawn from a plan to assist in the installation and development of the "largest" commercial computer in the world, a Cray-1. The computer is to be installed on the new site of the *Ecole Polytechnique* just a mile or two from the university, but Paris-Sud will have nothing to do with it (except to make a little use of it, once it is running). Orsay physicists have demonstrated over the matter and, at the same time, the scientific director of Paris-Sud's own computer laboratory, *Paris-Sud Informatique* (PSI), has threatened to resign on 20 June unless the government agrees to keep his own laboratory going.

The underlying issue is tangled, and the tangle goes right to the top. *Paris-Sud's* president, physicist Roland Omnès, is going to see the minister of education, Alain Savary, about the matter. But a remark that funding for PSI might not be renewed came from the ministry of research and technology, which is attempting to establish a computer policy for universities and research centres; and the two ministers, Savary and the research minister Jean-Pierre Chevènement, are not the best of friends.

The ministry of defence is also involved, both through its control of the *Ecole Polytechnique* and through the long-expressed wish of the military to purchase a Cray-1 (reportedly vetoed by Washington). So is the ministry of industry, which is trying to revitalize the French computer industry. Given the ever-present IBM lobby and the traditional hostility between the *grandes écoles* (such as the *Ecole Polytechnique*) and the universities, the result is a highly political problem.

At root, however, the dispute is technical. Cray-1 is a "vectorial" computer, whose great power depends on the parallel processing of a series of numbers. It is thus stretched for linear algebra (matrices and so on) only where the sizes of arrays are very large. Physicists generally do not need such arrays (except for modelling large systems such as the atmosphere) and for them the Cray-1 is far from being the most cost-effective machine. So when PSI computer engineers went to the *Ecole Polytechnique* to collaborate over Cray-1 development, they found themselves in conflict with *polytechnique* interests — which were, largely, in engineering and systems modelling. This led to personal conflict and ultimately Omnès withdrew the PSI team from the collaboration.

Since then the atmosphere has become even more heated, with PSI staff claiming, in effect, that the *Ecole Polytechnique* staff are in the hands of IBM; and indeed, the *polytechnique* has scrapped plans to link the Cray-1 to a French-built CII-Honeywell-Bull EBS-8 (a link PSI was to

Schering-Plough take \$30 million plunge

Palo Alto

DNAX Ltd, a small Californian company best known for having some pioneers in genetic engineering on its scientific advisory board, seems likely to be acquired by the New Jersey pharmaceutical company Schering-Plough for \$29.4 million. Schering-Plough already owns 13 per cent of another leading biotechnology company, Biogen SA.

Schering-Plough is to pay \$19 million in cash and is offering 340,000 shares of its common stock valued at approximately \$10.5 million. The common stock is to be distributed over 5 years under an incentive plan to the 18-member advisory board and staff of 40 scientists. Preferred shares of DNAX are at present owned by a Swiss group and a US venture capital unit of Elf Aquitaine, the French oil company.

Founded in 1980, DNAX has not so far launched any products or filed any patents. Its scientific advisory board boasts three Nobel laureates: Paul Berg and Arthur Kornberg, both of Stanford

University, and George Palade of Yale University.

Alejandro Zaffaroni, DNAX's founder, hopes that the company will eventually manufacture the protein antibodies made by the human body when it is combating infections and inflammatory diseases and allergies, and hopes to have specific macromolecules ready for testing in four to five years.

Zaffaroni is also founder and president of Alza, a company specializing in the delivery of drugs to target organs within the body. Alza's common shares in DNAX, valued at \$5.3 million, will be bought by Schering-Plough in its acquisition of DNAX.

In his search for a suitable buyer for DNAX, Zaffaroni says he approached more than 20 companies in Europe, Japan and the United States. Schering-Plough's purchase of DNAX will be the first instance of a major pharmaceuticals company acquiring an entire biotechnology firm.

Charlotte K. Beyers

work on) and will go for an IBM instead. The final crunch was a comment made at a meeting by a ministry of research and technology official, who said that Chevènement would probably not sanction the renewal of PSI equipment (a ten-year-old UNIVAC), and that Orsay physicists should use the Cray-1 "only three kilometres away".

Omnès, however, is calm. He believes official thinking is moving his university's way, and that this is not the time for a big public campaign. Nevertheless, some of his more vocal staff disagree with him. Nor does time seem to be on his side. A ministry of research spokesman said this week that it did not want to replace university computers in response to "piecemeal" pressure, and that it would take "several months" to establish a coherent policy. In the meantime the (part-time) scientific director of the Orsay computer centre may have resigned and some of his full-time technical staff, uncertain about their future, may have begun to look for other jobs. That — ultimately — would leave one of France's leading laboratories without a computer.

Robert Walgate

Law of the Sea

Soviet enterprise

In advance of the inconclusive end to the UN conference on the law of the sea, the Soviet Union last month passed enabling legislation to cover the granting of prospecting and exploitation licences to Soviet enterprises wishing to engage in undersea mining beyond the continental shelf.

The decree of the Supreme Soviet now

published describes the measures as "temporary" and stresses that the Soviet Union "is and will continue to be in favour of the settlement of urgent problems of the legal regime of the world ocean on an international basis . . . taking into account the legitimate interests of all states". In the absence of any such legislation, however, the Soviet Union has been "compelled" to protect its interests by granting off-shelf licences to Soviet mineralogical concerns.

The decree was clearly an answer to Western proposals on off-shelf mining. In particular, the head of the Soviet delegation to the law of the sea conference, deputy foreign minister S. P. Kozyrev, categorically rejected Western proposals to grant licences on a "first-come first served" basis. This, he said, was a principle "widely employed during the colonial enslavement of countries and peoples".

Commenting on the new decree, the daily *Socialisticheskaya Industriya* stressed the interest of US companies in off-shelf strategic minerals which, it alleged, had pressurized President Reagan to renege on earlier understandings. The new decree has therefore been interpreted by some commentators as simply a tactical move to strengthen the Soviet position at the bargaining table.

The provisions of the decree, however, are considerably more detailed than would be necessary for such a purpose. It goes into considerable detail about safety zones around deep drilling installations, the notification of temporary navigation hazards, disputes over rights with the "agencies of foreign states" and the setting up of a special fund under the Council of Ministers to which Soviet licence-holders must pay part of their profits.

Moreover, a time-lag has been built into the decree, presumably to allow the Soviet Union to acquire the necessary technology. No off-shelf operations, it states, can begin before 1 January 1988.

Several clauses deal with possible non-Soviet participation in off-shelf operations. This would presumably be of two types — with developed and with developing countries. One likely partner in the first category is East Germany, with which the Soviet Union (together with Poland) is already linked in the Baltic drilling consortium *Petrobaltik* to which the Germans have made a considerable

technological contribution. The decree, however, stresses the Soviet Union's role in "assisting" its future partner in the development of technology and the training of personnel, suggesting participation by developing countries. (This would fit in with Kozyrev's rejection of the "colonial" overtones of the Western proposals.)

The developing country would in the first instance presumably provide a shore base and other facilities. Any minerals recovered, according to the decree, would become Soviet property, though in some cases, some or all of them could revert to

the partner state. The concept of the Soviet Union building up Third-World off-shelf technology would, however, become particularly relevant if an international agreement were drawn up dividing the off-shelf zone between the interested countries. In that case, the "temporary measures" now announced would automatically lapse. But existing collaboration agreements between the Soviet Union and developing countries on mining activities normally provide for the Soviet Union's initial investment in the technology being repaid over several decades in appropriate minerals. **Vera Rich**

Conference all at sea

Washington

The largest ever diplomatic conference of the United Nations, with 160 governments represented, ended on 30 April in New York with a huge majority for a draft treaty on the Law of the Sea. But the participants in this eight-year-long conference have not gone home in triumph. Instead, they hope to limit the damage that has been done.

What went wrong? In the end, the United States voted against the treaty, as did Israel, Turkey and Venezuela. Britain, West Germany, the Netherlands, Belgium, Spain and the entire Eastern bloc abstained. Ironically, even the dissenters think the draft is a splendid basis for a treaty. It resolves several complex issues, such as navigation through narrow straits.

The stumbling block turned out to be the issue well advertised in the past few years: the rights of private companies to minerals from the deep sea bed. Both the United States and the Soviet Union were affronted. The new Administration in Washington had spent a year trying to decide how to amend the clauses on international access to oceanic minerals that the Carter Administration had negotiated. The Soviet Union, by contrast, objected to a form of words seeming to cast doubt on its freedom from free enterprise.

What happens now is anybody's guess. The procedure requires that governments wishing to sign the treaty must do so by December. Thereafter, the treaty will become international law when a specified quota of signatories has formally ratified it. The flaw is that because the draft of the treaty was not approved without dissent, it is open to any member of the conference to insist that the text cannot be a basis for international law because it was disputed.

So who shoulders the blame? The outcome of the conference was a failure for the diplomats. The bizarre handling of the United States negotiating team may have been crucial.

The Law of the Sea session just ended lasted just eight weeks, and brought to an end the year-long spell during which the United States Administration had put the negotiations on ice.

Private seabed mining has been the only stumbling block. Ideologically, the Administration objected to those parts of the text that would give developing countries a say over the private development of seabed minerals. But among the six objections listed by the United States when it returned to the negotiations in January were the provision that the treaty could be amended by three-quarters of its signatories without the US Senate's agreement, and the inclusion of the Palestine Liberation Organization among the members of the conference.

After the event, US negotiators claim that they were not given enough time to negotiate the real issues. The conference chairman, Tommy Koh of Singapore, made them stick to a prearranged timetable. The deadline of 29 March had early on been fixed for the filing of committee reports on which a final draft would be drawn up. By then, however, the mining committee had not agreed a resolution on seabed mining, while the constitutional objection to changing the treaty without consent of the US Congress had not been discussed.

Part of the difficulty seems to rest with the makeup of the US negotiating team. Its leader was James L. Malone, an assistant secretary at the State Department whom the Administration was stripping of his responsibility for nuclear non-proliferation. Malone's chief aide was Leigh Ratiner, a former government seabed mining expert working for the mining industry.

Ratiner was a free-wheeling negotiator and a veteran of earlier sessions at the law of the sea conference. Malone was by comparison a novice. Observers say that Malone would often say one thing and Ratiner another. The result would be either brilliant or confusing, depending on the observer. The delegation was under constant pressure from the mining lobby, which insisted that any sell-out to the conference would be denounced when the treaty came up for ratification in Congress.

The United States' demands for revisions of the treaty, circulated before the beginning of the last session in March,

were quickly followed up by detailed textual proposals — and as quickly rejected as too sweeping. A compromise proposal, put forward by 11 states including Australia, Canada, Denmark, Finland, Iceland, Ireland, New Zealand, Norway, Sweden and Switzerland, was quickly rejected by the United States as inadequate but later recognized to be a basis for discussion. By then, however, it was too late.

What will happen now is far from clear. The ceremony at which the treaty will be opened for signature has been arranged for Caracas in December, but the host country, Venezuela, voted against the draft last month because it fails to resolve the dispute with neighbouring Colombia.

No state is bound by the vote it cast on 30 April. Abstaining states or no-voting states could still attend the signing ceremony. But Israel's no is unlikely to change, as the PLO no seems likely to stay in the final text. The Reagan Administration could not change the US vote without an ideological turnabout, which seems unlikely.

Ironically, the Administration's adamant defence of rights to ocean mining may have brought about a situation in which no mining is possible. Tommy Koh has threatened to sue any country that proceeds unilaterally to mine outside the framework of the Law of the Sea. So, if the United States, and other mining states such as the United Kingdom, remain out of the fold, they may see their mining ventures flee to other countries such as Japan.

Meanwhile Elliot L. Richardson, Law of the Sea negotiator for the Carter Administration, believes that the outcome of the conference is "sad". Richardson said that "ideologues" in and outside the Reagan Administration prevented the US negotiating team from being flexible.

The Administration, he said, "wasted" a year deciding whether to continue negotiating, and so spent too little time preparing for the talks themselves. At the meeting at which the US team agreed to produce specific draft articles, it had run out of time and had to include many items that it knew were unacceptable. Similarly, Richardson believes the US team should not have responded so negatively to efforts by a group of eleven countries to negotiate compromises. **Deborah Shapley**