

frequency has been added to its radiometer for more accurate measurements of atmospheric water content, a key factor in the satellite's subsidiary role of weather forecasting. The satellite also carries indigenously developed solar power cells for space qualification tests.

The next step after Bhaskara II will be the 600-kilogramme Indian Remote Sensing Satellite I (IRS I). A memorandum of understanding has been signed with the Soviet Union for launching it in 1986.

But India now has to face the prospect of a much more expensive space programme than in the past, since Bhaskara II marks the end of free launch vehicle and rocket booster facilities provided by the Soviet Union since the launch of the first Indian satellite in 1975.

Indian scientists are working on indigenous launch vehicles as alternatives, although experiments with the SLV-3 launch vehicle have so far achieved only qualified success. Nothing daunted, the Indian Space Research Organization is developing the Augmented Satellite Launch Vehicle (ASLV), based on SLV-3, which can put a 150-kilogramme satellite into space. India also plans to develop a polar satellite launch vehicle by 1986-87 to launch 600-kilogramme satellites into sub-synchronous polar orbit 500 to 100 kilometres from the Earth. **Sunil Saraf**

European environment

One log-jam ends

Brussels

The Council of EEC Environmental Ministers which met in Brussels on 3 December was remarkably successful, with agreement being reached on several previously contentious issues.

The directive regulating discharges into the aquatic environment of mercury from the chlor-alkali industry was adopted. Attempts to push through the mercury directive and the "drins" directive (regulating aldrin, dieldrin and endrins) foundered on the dispute over whether quality objectives (favoured by the British) or limit values (preferred on the continent) should be used to assess the maximum permitted level of pollution discharged into water from an industrial plant. The ministers have now agreed on a clause requiring the latest technology to be used when building new plants.

The haggling over the Seveso directive on the prevention of major industrial accidents also ended at the meeting. The new French government has toned down its objections to the clause on the consultation of countries across the frontier from new plants. The consultations will now take place on a bilateral basis — without the involvement of the European Commission as originally proposed. Although the directive does not cover nuclear installations, the same consultation procedure is at the centre of a dispute between France and

Electronic intrigue

Palo Alto

In probably the largest theft of semiconductor devices ever, \$2.7 million worth of integrated circuits disappeared over Thanksgiving weekend from Monolithic Memories Inc., a "Silicon Valley" company.

About 498,000 chips of two types were stolen. One kind, a programmable array, PAL, embodies circuits that provide a logic function in a wide range of computer products including video games, industrial equipment and computers used by the military. The second type, FIFO, is used to input data at one speed into computers and take it out at another.

About \$20 million worth of advanced computer chips disappear each year into a national and international underworld electronics trade. Integrated circuits are smaller than a fingernail, hard to identify and can sell for \$100 apiece. Many stolen chips are smuggled out of the United States into Eastern Europe. President Reagan's embargo on allowing Communist countries to buy high technology equipment provides a good market. Other chips are sold to pay narcotics dealers.

In 1979, an employee at INTEL stole 10,000 microcomputer devices worth \$1 million. They passed through black-market distributors in West Germany and eventually arrived at Siemens, a West German computer manufacturer. This robbery was traced when Siemens told INTEL that the untested chips were faulty. That the intensive electronic and human security at Monolithic Memories was bypassed suggests that in this case also the thief was an employee: the company is offering a reward of \$50,000 for information leading to an arrest.

Charlotte K. Beyers

Belgium. The French government intends to build power stations at Chooz, a few kilometres from the Belgian border.

Agreement was reached on a technical proposal to exchange data on sampling and monitoring levels of atmospheric pollution. However, the directive on safety levels for lead in air must wait until a communally acceptable method of monitoring atmospheric pollution is found.

Broad agreement was reached on the European Commission's third environmental action programme and its proposed policy to give environmental considerations greater weight when determining other EEC policies. Finally, despite much discussion, there was no decision to implement the Washington Convention — the EEC regulation on the trade in endangered species is, in fact, reported to be much tougher than the convention.

Jasper Becker

Animal welfare

Promise delayed

The new European legislation to protect laboratory animals seems to be in the hands of legislative snails. Optimists had expected agreement on the draft of a Council of Europe convention on "the protection of animals used for experimental purposes" last May. But the deadline passed, and the hope now is for agreement in March 1982.

Discussions have been under way since 1978, when the Council of Europe appointed an expert committee to draft model legislation. But the experts have so far failed to agree among themselves. Their latest disagreements relate to the "pain condition" that if an animal suffers severe and enduring pain, the experiment must stop and the animal be killed; the use of animals for more than one experiment; and the experimental procedures which should be included in the statistics on animal experiments.

Most of the representatives from the council's 21 member states object to the lack of provision for exemption from the pain condition in the latest draft. The exception is Britain, which wrote the draft when it took over chairmanship of the committee in April 1980. Britain argues that its own legislation, which includes the pain condition without exemption, has worked well since it was enacted in 1929.

Approval of the convention is also being held up by West Germany's objection to a clause which permits an animal used in one painful experiment to be used again. Most other countries accept the clause, some less willingly than others. A further stumbling block relates to whether animals used as controls, for example, should be included in statistics on animal experiments. Sweden believes that they should, but most other countries think their inclusion would push up the apparent number of experiments unnecessarily.

The aim is to resolve these differences before the next annual meeting of the expert committee in March. When agreement is reached, however, a council of ministers will have to approve the draft before it can be laid before individual states for signature and ratification. Because ratification is a lengthy process, the convention is unlikely to come into force for several years.

Meanwhile, the European animal welfare lobby, increasingly vociferous, is asking for tighter controls than those in the latest draft. The Council of Europe's parliamentary assembly, which has no power but which can be influential, has agreed to discuss the lobby's demands and consider recommending changes to the terms of reference of the expert committee. If the assembly decides to recommend changes and the council of ministers agrees to implement them, the convention could be delayed indefinitely or even killed.

That, however, is unlikely. Most states