Vienna accord on remote sensing

Conference calls for bigger UN role

Vienna

New and expanded space-related activities, recommended to the United Nations by the Unispace-82 conference which ended last Saturday, should cost the United Nations $3.2 million annually — almost four times the 1980–81 budget of the existing Outer Space Affairs Division of the UN Secretariat. These activities, the conference proposed, should be funded voluntarily by the member nations, and the UN General Assembly should rearrange its budget so that the increase in personnel costs may be absorbed within the available resources.

The proposed activities are largely information related, including consultancy services to assist developing countries in selecting space technology systems, study tours, seminars, and training fellowships, the creation of an international space information service, expansion of the existing space library and the establishment of a regular newsletter on space.

The need for such services became abundantly clear during the two weeks of Unispace-82; remote sensing has been constantly hailed as the answer to environmental and resource problems, and a bewilderingly large range of systems was on display for developing countries shopping for hardware or know-how. Yet the suppliers of these products were often first to admit that their data are simply not reaching those who most need the information. One representative of the UK Natural Environmental Research Council quoted the case of a remote sensing programme which identified icebergs heading directly for a Canadian off-shore oil-rig — with no organizational framework through which a warning could be transmitted to the rig at risk.

The conference report called for the formulation of international principles on satellite remote sensing which would allow the "sensed" state "timely and non-discriminatory access under reasonable conditions" to primary data relating to its territory.

The conference also expressed "real concern" over the approaching saturation of the geostationary orbit with communications satellites in certain frequency bands. Research into ways of facilitating the closer siting of satellites is "imperative", and the feasibility of using highly elliptical orbits for communications satellites should be re-examined. The International Telecommunications Union was recommended to consider introducing into its future regulations a clause stating that a satellite owner was responsible for removing its hardware from orbit when it became inoperable.

Similarly, although the conference urged member countries to examine the feasibility of direct television broadcasting satellites for education in remote rural areas, it also urged them to consider the possibility of international or regional satellite space segments, shared by neighbouring countries.

In general, the conference confined itself to the specifics of space technology and its applications but there was also a full discussion of the problem of preserving peace in space. After the three main committees of the conference had failed to reach consensus on this issue, Dr Willibald Pahr, the Austrian foreign secretary and president of the conference, convened a 15-member drafting group, called the "Friends of the president" which represented all regional groups and which finally, and with the conference in extra time, found an acceptable consensus wording calling on all nations, "in particular those with major space capabilities" to "contribute actively to preventing an arms race in outer space".

Vera Rich

Few winners in Australian budget

Sydney

The Australian government's latest budget, framed amid growing speculation about an early election, once again cuts back on funding for most areas of scientific research. The budget, released last week, was built around tax cuts and other handouts for the middle income earners. The government proved once again that they see very few votes in research funding.

Australia spends less than 1 per cent of gross domestic product on research, considerably less than most Western countries. The government provides about 70 per cent of this funding, which is an unusually large proportion by world standards. This year over half this money will go to the Commonwealth Scientific and Industrial Research Organization (CSIRO) and the rest to the other government agencies and the universities.

One of the few bright spots in the budget is the re-allocation of A$49 million (£27 million) to a scheme that favours research projects with product-oriented goals. This re-allocation came as a surprise because the scheme, funded under the Industrial Research and Incentives Act, was left up in the air last year when its budget was frozen after only A$24 million was spent.

In the budget, basic research in universities has been given A$19 million, around 4 per cent less in real terms than in 1981. This continues the steady decline which has gone on since 1975. The funds are channelled through the Australian Research Grants Scheme (ARGS) which now contributes only 15 per cent of the total national research spending compared with 24 per cent in 1975. If ARGS uses its reduced budget to maintain the top research groups, it will be unable to support about 100 projects that would otherwise have been accepted, according to Professor Max Brennan, chairman of the committee administering the scheme.

But there were some winners in the area of basic research. In astronomy, prior to the budget, two proposals were vying for patronage. One was the radioastronomers'

Canada's array poised

While Australian radioastronomers have just received the go ahead for their long baseline array of telescopes (see above) the fate of a Canadian counterpart is still in the balance.

The Canadian Long Baseline Array (CLBA) has already been approved in principle by the National Research Council (NRC) which has selected it over several competing big-science projects, such as the Canadian high energy electron ring and Starlab. A final proposal for the CLBA will probably be approved by NRC in September. The economic development committee of the Canadian cabinet will then have to decide whether it can afford the Canadian $70 million needed to construct CLBA — with $6.5 million per year running costs — in the midst of a recession.

The current proposal for CLBA calls for eight 32-metre dishes spread from British Colombia across to Newfoundland and one smaller dish in the North West Territories. Thomas H. Legg, the originator of the project, says the CLBA could be operating within four to five years of approval. The schedule is important, for the United States is planning its own very long baseline array that would stretch across the continent and include sites in Hawaii and Alaska. A proposal for building the system has been submitted to the US National Science Foundation (*Nature* 12 August, p.596) but whether it will be included in the US budget for fiscal 1984 is anybody's guess. There is a debate about the need for two separate systems of this size and both the Canadian and the US sides have thought about a possible link but nothing concrete has yet been proposed.

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"Australia Telescope", the other the optical astronomers' "Starlab" project.

With the news that the Australian Telescope has been funded to the tune of A$25 million, CSIRO can now proceed to develop a continental-scale, radio-linked interferometer network. When completed in 6 years' time, this should provide a Southern Hemisphere radio facility comparable to the most sophisticated interferometers in the north, complementing the activities in the optical and infrared bands of the Anglo-Australian Telescope.

The Australian Telescope will consist of a linear array of five 22-metre dishes at Culgoora in New South Wales, a 22-metre dish at Siding Spring (the site of the Anglo-Australian Telescope) and a 64-metre dish at Parkes. The total array will be equivalent to a dish 300 km across with a revolution of 0.1 seconds of arc — comparable to the US/European space telescope. It is also proposed that five other sites, covering much of the continent, can be radio-linked to the network, improving the resolution to one-thousandth of a second of arc.

The Starlab project has not been so fortunate. This joint Canadian, US, Australian scheme aims to place a 1-metre telescope in Earth-orbit by 1989. Australia's contribution was to have been the instrument package for the telescope. At this stage the government is not prepared to commit the full A$28 million that would be necessary if Australia is to participate. But it is keeping the project alive by providing A$3.3 million to local industry for some preliminary work.

Australian postgraduate research scholars were another notable group to gain in the budget. About one third of all full-time research students enrolled for higher degrees are supported on these scholarships. They have just been awarded a 50 per cent salary increase, presumably in recognition of the importance of their work as integral members of university research teams, and as Australia's future research scientists. Although this increase sounds impressive, the salary of a scholar has now only climbed from below the official poverty line to a generous A$40 a week above (A$6,850 a year). This is still less than half the average wage and no doubt a measure of the high esteem in which many Australian politicians hold Australian science.

Peter Hunt

US plant patent disputed

A fierce protest against the validity of a US patent dealing with plant breeding has been made public by Professor N.L. Innes, chairman of the British Association of Plant Breeders and a member of the staff of the British National Vegetable Research Station. The patent complained of was awarded in April this year to the Colorado based corporation Agrigenetics Research Associates, a seed firm with annual revenues of $100 million.

The invention for which the patent has been awarded is described in the published version (US patent number 4,326,358) as a technique for accelerated production of new hybrid strains of plants and rapid commercial production of seeds from such hybrids. The patent claims that seeds of desirable new hybrids can be readied for marketing in as little as three years rather than the present eight to twelve years.

In conventional hybrid production, the plant breeder first has to breed two different homozygous plant lines from which a hybrid is produced and tested. Not only can it take many years to breed the homozygous lines but homozygous plants often produce low numbers of seeds.

In its essentials the invention covered by the patent starts with the crossing of any heterozygous plant — of which there is a great variety of good seed producers — with a heterozygous or homozygous partner. The hybrid offspring of such a cross will not be genetically identical but, on occasion, the plants will still be sufficiently similar to be worth testing as a potential crop.

If they have desirable crop qualities, the breeder then returns to the parent plants and propagates them, asexually, as clones. The large numbers of each parent so generated are then crossed to produce large numbers of hybrids, equivalent to those of the original cross of the individual parents.

The protest from the British Association of Plant Breeders (published in full on page 786) boils down to the assertion that the use and advantages of heterozygous parental plants as breeding stock are well known and that clonal propagation of individual plants is now a standard technique in plant breeding, so that the particular combination of the two principles for which a US patent has been awarded must be obvious and thus not qualified for protection.

Even the combination of techniques described in the patent is very similar to that used in practice by, for example, British sugar beet breeders, says Dr Richard Macer, secretary of the British Association of Plant Breeders.

According to Rene Tegtmeyer, of the US Patent Office, to which Professor Innes has sent a copy of the letter, a formal request for reexamination can be filed after a patent is issued, but only on the grounds of a prior patent or publication that was overlooked by the patent office in its original examination. Prior public use or sale is not sufficient grounds for reopening an already-issued patent. Even in the original examination of an application, Tegtmeyer says, a foreign use would not bar patenting in the United States, although a foreign publication could.

"Any given detail or sequence may seem obvious, but the way they're put together may be original", so far as the patent law is concerned, says Dr David Padwa, chairman of Agrigenetics, who will shortly announce licensing terms that will be "fair and reasonable".

A second Agrigenetics patent, applying the techniques to a specific species, was recently allowed by the patent office and should soon be issued. Meanwhile Agrigenetics awaits the outcome of its application last January to the European Patent Office for a patent similar to the one issued in the United States.

List gończy

Komenda Wojewódzka Milicji Obywatelskiej we Wrocławiu poszukuje na podstawie listu gończego wydanego przez prokuratora rejonowego dla Dzielnicy Wrocław-Śródmieście: Bolesława GLEICHGEWICHTA s. Adama i Marii z d. Majerane, ur. 30 IV 1919 r. w Warszawie, ostatnio zamieszkałego we Wrocławiu, ul. Norblina nr 21, zatrudnionego w Uniwersytecie Wrocławskim wydział matematyki, fizyki i chemii.

Wymieniony podejrzany jest o to, że jako członek Komisji Zakładowej NSZZ „Solidarność" w Uniwersytecie Wrocławskim nie odstąpił od kontynuowania działalności związkowej, mimo jej zawieszenia, lecz wziął udział w organizowaniu strajku w gmachu głównym tej uczelni oraz kierował jej przebiegiem.

Jednocześnie ostrzega się, że za ukrywanie poszukiwanego lub dopomaganie mu w ucieczce grozi kara pozbawienia wolności od 3 do 15 lat.

"WANTED for continuing trade union activities under martial law, and for organizing a strike in Wroclaw University" says this notice from a recent issue of the Wroclaw daily *Gazeta Robontnicza*. Professor Boleslaw Gleichgewicht, the subject of this notice, is a leading Polish mathematician, a former organizer of the clandestine "Flying University" and one of the founder-members of the Wroclaw University chapter of Solidarity. He is now in hiding.

The notice includes a warning that the penalty for hiding or assisting the "fugitive" is from three to fifteen years loss of liberty.

Australian patents bill

Seeds of doubt

Canberra

The Australian government's first attempt to legislate for the protection of new plant varieties has blown up in its face. The Plant Variety Rights Bill, introduced a year ago and passed by the House of Representatives in April, is now the focus of a political storm. And the Senate has referred the bill to its Standing Commission on Natural Resources, a procedural device for postponing a decision.

The objective of the bill, of crucial importance in a country with a large agriculture industry, is to enable plant breeders to acquire the same kind of proprietary rights in new plant varieties as have long been available in some European countries. The present Patents Act, dependent as it is on the criterion of reproducibility, does not protect most plant varieties.

Five years ago, the Australian Agricultural Council (a political body representing federal and state ministers) recommended legislation on plant varieties protection with the objectives of stimulating the commercial plant breeding

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