US Navy oceanography satellite heading for a comeback

Washington

GIVEN up for dead late last year, the Navy Remote Ocean Sensing Satellite (NROSS) appears poised for a comeback. Navy officials have told Congress that they would like to restart the programme, and are now trying to gather together funds that had been redistributed by the Pentagon when the project was axed.

The Navy had originally proposed NROSS because of its importance for sea-surface observations. Most operational meteorological satellites carry infrared or visible radiometers that give information about clouds. To pierce the clouds, the Navy developed a low-frequency microwave radiometer, capable of providing all-weather measurements of sea-surface temperature. At high northern and southern latitudes, this ability is critical, because the ocean surface is hidden by clouds 70 per cent of the time.

Besides the radiometer, NROSS would have carried an altimeter for measuring wave heights and an instrument calle SSMI (special sensor microwave imager) that provides information about ice concentration and water vapour content. A sophisticated scatterometer capable of providing information about both wind speed and direction would also have been on board.

But NROSS faced budget problems, and in December, the Navy decided to cancel the project. The cancellation provoked a flood of protest. James Fletcher, director of the National Aeronautics and Space Administration (NASA), and Erich Bloch, head of thee National Science Foundation, both wrote to then Navy Secretary John Lehman urging the retention of the programme. NASA's interest in NROSS was pragmatic, since NROSS' scatterometer is a NASA instrument being built at the Jet Propulsion Laboratory. Data from the scatterometer, called NSCAT, will be shared between the Navy's operational needs and NASA's research aims.

Lehman's initial decision to cancel the project was based on an estimated total cost of $420 million, and NROSS supporters in the Navy argued that the true cost was closer to $350 million. On 10 April, Lehman wrote to Congress announcing his intention that the project be restarted. The main Department of Defense must also be convinced if NROSS is to survive. A formal review by the office of the Secretary of Defense is just getting started, and should be completed this fall. If the Pentagon gives its blessing, NROSS could have a late 1991 or early 1992 launch.

Joseph Palca

Putting more "I" into Australia's CSIRO

Sydney

FURTHER change is on the way for the Commonwealth Scientific and Industrial Research Organization (CSIRO), Australia's largest research body. Eight months ago a shake-up at the top gave CSIRO a new corporate-style board (*Nature* 324, 608, 1987). Now the whole organization is to be restructured to make it more responsive to the needs of industry.

CSIRO employs 2,500 scientists and has an annual budget of A$450 million. Under the new scheme its 41 divisions grouped into five subject areas are to be cut to 32 divisions in six areas. The reorganization plan comes from a management consultancy, McKinsey and Co., the choice of which as an advisory body says much about the new board's thinking. CSIRO will no longer be run by scientists for science's sake but will take on more of a business philosophy, and less reliant on public money.

Attempts will also be made to cut red tape by decentralizing administration away from CSIRO headquarters in Canberra and placing more authority in the hands of the divisional and institute chiefs. They will receive a crash course in management techniques while 120 jobs will be lost at CSIRO headquarters.

The move towards industry is partly dictated by necessity. CSIRO's budget had gradually been eroded while research costs have risen, according to Dr Keith Boardman, the organization's chief executive officer. While CSIRO once conducted up to 2,000 research projects the number is now nearer 500. He hopes the present A$55 million received from industry will grow to A$100 million by 1990.

McKinsey and Co.'s new structure divides CSIRO into "business systems" which integrate research along the same lines as the industry it will serve. There is, for example, a natural sequence for wool-related research which will be grouped administratively to include pastures and soil research, sheep reproduction and nutrition, wool harvesting, wool processing and textile manufacture. Divisions with little industrial relevance fear even leaner times than at present. But some reassurance has been gained from CSIRO chairman Mr Neville Wran QC, who has said that CSIRO remains commited to excellence in long-term and fundamental research.

Charles Morgan

Japan boosts rocket power

Tokyo

WITH a request to the Space Activities Commission submitted on Monday, Japan's Institute of Space and Astronautical Science (ISAS) began manoeuvering for permission to build a rocket that would one day be capable of carrying scientific missions to the planets. The request, for a study of a solid-fuel rocket to triple ISAS's payload capacity, would break a political argeement that has limited the size of ISAS's rockets for the past 17 years.

The agreement came into being with the creation of the National Space Development Agency (NASDA) in 1970. NASDA was given responsibility for applications satellites and bought advanced US technology while ISAS remained an academic organization launching scientific probes and satellites with its own home-developed solid-fuel rockets. A price for the continuing independence of ISAS (then a part of Tokyo University) was an agreement that its rockets should not get much bigger — a limit of 1.41 metres tail diameter was set.

That limit still stand but ISAS engineers have shown extraordinary ingenuity in working within it — and all with a budget less than one tenth that of NASDA. Payload capacity has been built up by making the rockets taller and adding strap-on boosters. The latest model, the Mu 3S-II, cheekily bulges beyond 1.41 at the cone.

Since Japan's first satellite *Ohsumi* was placed in orbit in 1970, ISAS has successfully launched 18 more satellites and probes and has only had one failure (an X-ray satellite in 1978). And in 1989 ISAS plans to launch a lunar probe, Muses-A, that will swing around the Moon, perhaps several times.

But with Muses-A, ISAS's engineers are reaching the limits of their ingenuity. Wherein comes the proposed new rocket. The new launch vehicle would be capable of placing a 2-ton satellite in low Earth orbit — treble the payload capacity of Mu 3S-II, and slightly less than NASDA's H-I. But, although only a couple of metres taller than Mu3S-II, the 1.41-m tail limit would have to be breached.

The Space Activities Commission, which formulates Japan's space policy, will consider the ISAS request over the coming months. ISAS has already drawn up a design for the new rocket and, if given the go-ahead in time for the fiscal 1989 budget applications (which are made a year from now), it could be ready for launch in 1993. Among the missions under consideration are one to Venus, which could involve the release of a balloon into the Venusian atmosphere, and a follow-up to Muses-A.

David Swinbanks