

## White House calls for range efficiency

COMMERCIAL USERS should have a greater say in running US space launch ranges, concludes a White House-led interagency review of the future management and use of these government-owned facilities.

The review was launched last March in response to issues raised by the growth of US commercial launch activity and the government's increasing reliance on commercial launch services. This will increase when the commercially owned and operated Evolved Expendable Launch Vehicles (EELVs) enter service in 2002.

The report says the USA must improve the efficiency of range operations to support commercial launches and maximise the use of state and spaceport money to maintain and modernise launch bases and ranges.

Commercial launch operators and spaceports are now responsible for running satellite and vehicle processing facilities and launch pads leased from the US Air Force. For the EELVs, which become operational in 2002, operators will be responsible for constructing the facilities and pads and the government will buy launches. □

# Ball plans to bid for radar spot on remote-sensing satellite

GUY NORRIS/BOULDER

BALL AEROSPACE & Technologies is "gearing up" to propose a synthetic aperture radar to NASA for a free-flying remote sensing satellite. This follows the success of its antennas on the Shuttle Radar Topography Mission (SRTM), which was completed on 22 February.

"We're starting to form a team at a low level," says Ball Aerospace SRTM programme manager Don Figgins, whose team produced the antennas used in the SRTM to collect data on over 80% of the Earth's landmass for the National Image and Mapping Agency. The US agency plans to use the three-dimensional information to create the most accurate and complete topographic map of the Earth.

The free flying lightweight synthetic aperture radar (LightSAR) proposal will be a revised and improved version of a concept that was passed over for funding last year by NASA in favour of the



The images from the SRTM includes this one showing the Tigil river next to the volcanically active Kamchatka Peninsula in Russia

US-French PICASO (Pathfinder Instruments for Cloud and Aerosol Spaceborne Observations) programme. The new remote sensing

platform would fly in a low Earth orbit collecting Earth science data on geology, geophysics and agriculture, and would be capable of limited movement outside its regular orbital track. "The difference is that the primary antenna would be larger than the outboard, the electronics would be newer with lower volume and reduced power requirements," says Figgins.

"We feel the SRTM will be a springboard to LightSAR and a few other potential [mostly classified US military spaceborne SAR] projects," he says. Ball designed the original Spaceborne Imaging Radar-C (SIR-C) antennas that were used to create maps on two previous Shuttle missions in 1994.

To generate the three-dimensional images with the SRTM mission, Ball supplied an additional, smaller, receiving antenna mounted on a 60m (200ft) telescoping mast. Although the Shuttle crew had difficulty in retracting the mast and stowing the sensor array, the mission was successful. □

## NEWS IN BRIEF

### ARIANE LAUNCH

Arianespace scored another success with the launch of an Ariane 4 booster from Kourou, French Guiana, on 18 February, carrying the Hughes Superbird 4, equipped with 23 Ku-band and six Ka-band transponders.

### FIRING ABORTED

The recent test firing of India's cryogenic engine for the second stage of its Geostationary Satellite Launch Vehicle (GSLV) was aborted 15s into a 30s duration burn at the Liquid Propulsion Systems Centre at Mahendragiri. The engine will be used on later models of the GSLV. Its first flights will have a Russian engine.

## NASA shocked by commercial Mir plans

NASA IS calling for the Mir space station to be de-orbited as planned this summer. The US space administration is concerned that plans for commercialising the Mir is diverting Russian attention and funds from the International Space Station (ISS) and contributing to delays of the latter.

The space administration is "not pleased with the performance and attitude" of the Russian company RSC Energia, which is behind the scheme to keep the Mir in orbit, says NASA administrator Dan Goldin.

Amsterdam-based MirCorp has received authorisation from Energia to lease Mir for space tourism, in-orbit advertising, industrial production and science. MirCorp has the rights for the commercial use of Mir for the rest

of the space station's life.

The organisation helped fund the Progress M-1 tanker mission to Mir earlier this month and will part-fund the flight in April of possibly three cosmonauts aboard a Soyuz TM craft for a 45-day stay aboard the station.

Energia's president Yuri Semenov says his company is exploring "a new path in our efforts to attract commercial funds and business to Mir".

Commercial use would cost between \$10 million and \$20 million, says Jeffrey Manber, MirCorp's president. MirCorp will be a direct link between commercial users of Mir and the station's operators, with MirCorp taking responsibility for establishing business conditions for the space station's use.

MirCorp's shareholders include Energia and venture capital firms, including Gold&Appel. Its chairman, Walt Anderson, is thought to be the main source of the initial MirCorp investment. Another MirCorp investor is telecommunications and Internet entrepreneur Chirinjeev Kathuria.

Space trips by wealthy individuals are a possibility, but not a focus of the business, says MirCorp. Individuals would have to undergo gruelling cosmonaut training.

Under the lease agreement, Russian researchers will be allowed to use part of the Mir at no extra cost. The Russian Government says that it will de-orbit the space station if no funds are forthcoming, but the MirCorp connection is likely to extend the Mir's life to at least 2001. □