

FINANCE TIM FURNISS / LONDON

ESA and NASA push ISS science

US agency adjusts budget plan to boost research potential, while European agency revamps marketing

NASA is adjusting its 2003 budget to implement a new Integrated Space Transportation Plan (ISTP) in a bid to ensure the International Space Station (ISS) is properly financed and to boost its scientific research potential.

The change comes as the European Space Agency (ESA) hires a commercial branding agency to market the on-board capabilities of the ISS to increase interest in scientific activities at the station.

The change of focus follows a lack of interest from the scientific community in using the station as a laboratory as the reduced ISS crew limits the research time available.

The new ISTP comprises three major programmes – Space Shuttle, Orbital Space Plane and Next Generation Launch Technology. NASA will continue to fly the Space Shuttle with required upgrades for the foreseeable future. Work on a proposed second-generation reusable launch vehicle (RLV) has been put on the backburner, with

activities limited to research, in a major change to the agency's earlier Space Launch Initiative (SLI).

NASA will push ahead with the development of a complementary seven-crew orbital spaceplane launched on an expendable booster to act as an ISS taxi within 10 years. This will have the potential to act as the permanent crew rescue vehicle (CRV).

In the meantime, NASA will need to order two Russian Soyuz TMA Interim CRVs to be constantly attached to the ISS if the station is to have a six-person crew, rather than the present three. The Shuttle's flight rate may also be increased to speed up completion of the ISS.

These changes will be reflected in NASA's five-year budget plan in its 2003 budget request, soon to be sent to US Congress.

Meanwhile, ESA has appointed Brussels-based Ogilvy Brand Relations to develop a branding and communications strategy for the ISS to boost commercial demand to

use the services of its sophisticated laboratories. ESA hopes to develop a commercial package acceptable to industry, because until direct links between space experiments and industry are proven, the ISS will continue to be seen as a unique but expensive place for research.

Meanwhile, the launch of the Space Shuttle *Endeavour* on the STS 113 mission to the ISS on 11

November was delayed until 18 November at the earliest after an oxygen leak was discovered in the orbiter's payload bay during countdown on Pad 39A at the Kennedy Space Center, Florida.

The leak was thought to come from beneath the midbody of the payload bay in one of two systems that feed oxygen into the crew cabin and into crew pressure suits.



The scientific community has shown little interest in the ISS's laboratories

LAUNCH VEHICLES

First Ariane 5 ECA booster ready to launch with cryogenic Vulcain 2

Arianespace is preparing to launch its first Ariane 5 ECA booster featuring Snecma's first-stage Vulcain 2 cryogenic engine, which allows the vehicle to carry 10,000kg (22,000lb) into geostationary transfer orbit. Preparations for the launch, scheduled for 28 November, come after the European launcher company and International Launch Services (ILS) won new business for the Ariane 5 and Atlas V boosters, respectively.

The first Ariane 5 ECA, flight 517, will carry the experimental Stentor telecommunications technology satellite and Eutelsat's Hot Bird 7 satellite from Kourou, French Guiana. The Alcatel Space and Astrium-built Stentor, operated by France's CNES, will use plasma propulsion for the first

time in a Western commercial satellite.

Snecma says it has focused on reducing costs with Vulcain 2. "Vulcain 1 cost €1.6 billion [\$1.6 billion] to develop and qualify and Vulcain 2 has cost €500 million," says Guy Corteel, director of liquid propulsion at Snecma Moteurs.

He attributes this partly to simplifying the design. In the gas generator, for example, design changes mean 72 small fuel injectors have been replaced by six bigger ones; a new forging system means two pieces in the head can now be forged as one; and other changes have been made to the body. The ECA booster also has a modified Ariane 4 HM-7B cryogenic upper stage.

Arianespace has won the con-

tract to launch Indonesia's Telkom 2 satellite aboard an Ariane 5 booster in 2004. Telkom 2 is being built by Orbital Sciences, and is based on the company's Star 2 spacecraft platform.

ILS confirms the award of the contract to launch the Greek-Cypriot Hellas-Sat communications satellite aboard a Lockheed Martin Atlas V booster in the first quarter of 2003. It is based on an Astrium-built Eurostar 2000-plus craft.

The Atlas V's maiden flight was in August on the first launch of a US Air Force-funded Evolved Expendable Launch Vehicle, on a commercial mission carrying Eutelsat's Hot Bird 6. The Atlas V has seven commitments to launch US military satellites and up to eight commercial satellites.

IN BRIEF

KOREAN LAUNCH

South Korea will launch its first liquid-propellant three-stage rocket on 27 November in preparation for its first satellite launch in 2005. The 14m (46ft)-long, 27,530lb-thrust (120kN) KSR III rocket will reach 137,700ft. The KSR III is being developed by the Korea Aerospace Research Institute with a \$64 million budget. The institute plans to develop a launch vehicle to place a 100kg (220lb) load into orbit in 2005.

VENUS REVIVED

The European Space Agency (ESA) has revived the Venus Express mission to orbit the planet and make radar soundings of its subsurface. It will be launched in 2005 after an extra infusion of €8.5 million (\$8.56 million) and will use the same design as the Mars Express orbiter to be launched in 2003.