Information

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astrium

an EADS Joint Company with BAE SYSTEMS

Astrium Develops A New High Performance Parachute For Beagle 2 In 3 Months!

On 26th September 2002, after a design and development period of 3 months, Astrium successfully completed the Project Review of its new high performance parachute for the Beagle 2 Mars Lander. Today, 18th October 2002, the parachute will be dropped from a balloon as the last in a series of comprehensive tests.

Only on 12th June 2002, Astrium had taken the decision to recruit its own team of experts to design, develop, manufacture, test and deliver a new lightweight parachute for the lander in under 5 months. This followed the discovery during tests in May 2002 that the airbags used to cushion the landing on the Martian surface were compatible only with descent velocities lower than those originally envisaged. The solution therefore was to reduce the impact velocity significantly by using a larger parachute manufactured from state-of-the-art materials as it had to be of the same mass and occupy the same stowed volume as the previous design.

Just one month later, Astrium, with the assistance of Analyticon, had recruited a core team to drive through the programme. A high performance ringsail type of parachute with a canopy area 56% greater than the previous one was designed by the Astrium team within 4 weeks. Lindstrand Balloons in the UK was contracted to structurally test the parachute and manufacture qualification and flight models. In order to verify the aerodynamic performance, Irvin Aerospace Inc. of California produced test parachutes and performed flight tests in the ideal conditions of the Arizona and California deserts.

The first flight trial, on 30 August, demonstrated outstanding parachute performance, which was fully confirmed in subsequent trials. The highly complex method of packing the parachute was demonstrated in the UK on 12th September by the rapid extraction of the parachute from its pack at speeds of up to 90mph. The simple, but severe method of towing the parachute out behind a truck was adopted to demonstrate the strength of the parachute, and on 16th September showed margins well in excess of requirements. This led to complete success in the Project Review on 26 September 2002.

The whole exercise, from the decision to create the team, to completion and verification of the design was achieved within an amazingly short 15 weeks. The flight parachute is due to be delivered for integration into the Beagle 2 flight structure in mid November 2002.

Another significant milestone in the demanding Beagle 2 programme has been met and Beagle 2 is on target for launch on ESA's Mars Express satellite aboard a Soyuz rocket from the Baikonur Cosmodrome on 23 May 2003.

Astrium is the Industrial Prime Contractor for Beagle 2 and is also the Prime Contractor for ESA's Mars Express spacecraft which will carry the probe out to Mars.

ASTRIUM is a joint venture owned 75% by EADS, European Aeronautic Defence and Space company, and 25% by BAE SYSTEMS. In 2001 Astrium had a turnover of 1.9 billion Euros with 8,400 employees in France, Germany, United Kingdom and Spain. Astrium is currently refocusing on its satellite business activities covering civil and military telecommunications and Earth observation, science and navigation programmes, avionics and equipments.

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