EAC

The 'Eneide' mission

Activities at the European Astronaut Centre focused in 2005 on the flight of one ESA astronaut in April, the preparations for two further flights in the coming years, the commencement of training on a European element of the ISS, and further preparation for Columbus operations.

The 10-day Italian-sponsored 'Eneide' Soyuz mission was successfully conducted between 15 and 25 April. ESA astronaut Roberto Vittori took an active role in spacecraft operations during the ascent and docking phases and the return journey, and all of the mission's main objectives, which included an extensive programme of 21 experiments, were successfully accomplished. Crew operations, medical support, training coordination with Russia and the coordination of payload-related training activities were all the responsibility of EAC. An important feature of this mission was the participation as back-up astronaut of Robert Thirsk from the Canadian Space Agency, whose extensive experience in the role of CapCom, and presence at the Columbus Control Centre, enhanced communication between the ESA and NASA ground controller teams.

The next Shuttle mission will carry a third crew member to the ISS, and will mark the start of the six-month ESA long-duration 'Astrolab' mission. The nominal ESA crew member is Thomas Reiter, with Leopold Eyharts as back-up. Training for the mission began in 2004 and continued throughout 2005, both at the Johnson Space Center (JSC) and at the Gagarin Cosmonaut Training Centre; two additional periods of training took place at EAC. In parallel with the flight crew training, preparation of the ground-support activities also progressed well.

In addition to the scientific benefits that the comprehensive Astrolab experimental programme will provide, ESA astronauts and ground personnel will be able to acquire and validate operational experience in long-duration flights on the ISS, which will be of direct benefit for the start of Columbus operations. It will also see the first usage of the ESA-developed Pulmonary Function System (PFS), which will support medical operations by enabling the evaluation of the physical fitness of the astronauts and the fine-tuning of countermeasure exercises.

Christer Fuglesang, who is scheduled to fly on Shuttle mission STS-116 as a NASA Mission Specialist, continued training throughout the year. Three space-walks (EVAs) are planned during his mission.

André Kuipers, back-up astronaut for the Canadian Space Agency (CSA) Increment, and Frank de Winne, have been assigned to long-duration flight training in preparation for Increments 14 to 18; this training will provide a good basis for that needed once they are assigned to an Increment flight.

Other astronauts were assigned to collateral duties, working in various areas supporting projects. Operations support was also provided by Hans Schlegel, who was assigned as Lead CapCom for the ISS Expedition 10 at the JSC Control Center.

Training activities at EAC are progressing well. With the newly designed end-to-end training service, EAC will become responsible for the training and certification of the Columbus flight control team, in addition to the

European Commission Vice-President Günter Verheugen (centre) sampling space food during his visit to EAC

existing crew training. To support this new role, the Columbus simulator at EAC has been converted to be identical to that available at the Columbus Control Centre (Col-CC). Simulation scripts and malfunction scenarios were prepared by the EAC instructor team and a first 'integrated simulation' was run on the Columbus trainer at EAC, with the Flight Control Team at Col-CC interfacing with an EAC simulation team and a surrogate crew operating the Columbus simulator at EAC. Communication with the crew was also performed from EAC, implementing the 'Eurocom' position for which EAC is responsible. A Eurocom team has been set up and the training has started.

With the Astrolab flight and the implementation of the first ATV training at EAC for Increment 13, ISS training coordination has turned into a truly multilateral function, with ESA becoming a full member of the Increment Training Integration Working Group.

Columbus training at user level was implemented for three ESA/NASA flight controller teams, and for one international astronaut class from ESA, NASA and JAXA.

The development of EVA pre-familiarisation training was supported by NASA, which welcomes the enhancement of the qualifications of ESA astronauts prior to entering EVA training at JSC. This training will be officially recognised by NASA following qualification, which is currently planned for mid-2006.

A self-standing European Human Behaviour and Performance (HBP) training package was developed and successfully tested. The astronauts of the ISS Partners have been invited to participate in the next training session, planned for April 2006.

International cooperation in the field of operations is demonstrating ESA's credibility as a partner. Support was provided to NASA by the EAC medical operations team for organising services to allow use of the French Air Force base at Istres as an emergency landing site for the Shuttle. On-call support in case of such an event is also provided by the Crew Medical Support Office during launches, and was first implemented for the Space Shuttle's return to flight in July.

Demand for astronaut participation in, and the support of EAC for, public events remained high throughout the year. One of the many visitors to the centre was the Vice-President of the European Commission, Mr Günter Verheugen, who received 'accelerated training' concerning the use of food items in space, concluded by a tasting session, which provided a real insight into living and working in space.

ESA astronaut Roberto Vittori back on Earth after his successful 'Eneide' mission to the ISS