

STATUS OF THE CURRENT ESA EARTH OBSERVATION MISSIONS

CGMS is informed of the status of the current European Space Agency Earth Observation missions. Two of them, MSG and Metop are in co-operation with EUMETSAT. The second ERS satellite, launched in 1995, is currently in limited LBR operations. Envisat and MSG-1 were successfully launched in 1st March and 29th September 2002, respectively. PROBA is covering the Science mission during 2004.

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1. - INTRODUCTION

The Earth Observation Directorate of the European Space Agency (ESA) is currently running a number of programmes. Two of these, MSG and Metop are in co-operation with EUMETSAT. The second ERS satellite, launched in 1995, is currently in limited LBR operations. Envisat and MSG-1 were successfully launched in 1st March and 29th September 2002, respectively. PROBA is covering the Science mission since 2003.

2. - STATUS OF THE ERS MISSIONS

The ERS-1 spacecraft, which ceased its operations in March 2000, is regularly tracked to predict and avoid possible interference with the orbits of other missions. All ERS services are provided by ERS-2, which remains operational.

All LBR instruments were operated on a global basis until the 22 June 2003, where the failure of the onboard recorders discontinued the global LR observations of the ERS missions. Since then, the ERS-2 Low Rate mission is continued within the visibility of ESA ground stations over Europe, North Atlantic, the Arctic and North America. Hobart, Beijing and Miami are awaiting the ESA's LRR acquisition systems, while a further extension of the network for LBR acquisition is being discussed with Beijing and McMurdo.

Due to a reduced pointing accuracy caused by the gyro failures, the Wind Scatterometer data distribution was interrupted from 17 January 2001 to the 21 August 2003; it is back into operations since 22 August 2003.

The Envisat Symposium in Salzburg (Austria) to take place 6-10 September 2004 will include a special session dedicated to the ERS scatterometer.

Currently all LBR data are distributed nominally. SAR is operated in response to user requests with an average duty cycle of some 4 minutes per orbit.

The Platform, Payload and the Instrument Data Handling and Transmission (IDHT) system, beside the recorders, is working nominally and despite the advanced mission lifetime no significant aging has been observed.

The consumption of hydrazine during the routine orbit control is very low. The fuel available would allow a continuation of the mission until 2007, including de-orbiting of the satellite.

The most complete information about the ERS mission, system, instruments, its products, user services and latest news can be found at <http://earth.esa.int/ers/>

3. - STATUS OF THE ENVISAT PROGRAM

The Envisat satellite, the largest Earth Observation mission ever operated, was successfully launched on 1st March 2002 by an Ariane-5 vehicle and is since then orbiting in its assigned 35-day repeat cycle, 30 minutes ahead of the ESA ERS-2 satellite. During the first weeks of the mission, all 10 Envisat instruments were progressively switched on and data taking activated successfully for all of them.

After the most extensive calibration and validation activity ever performed in Europe (200 teams), the Commissioning Phase was completed in December 2002 with a Validation Workshop during which the Earth Science community confirmed its enthusiasm for the initial performances and capabilities of the data provided by the Envisat instruments. The validation effort continues during the mission lifetime in order to continuously improve the accuracy of the products and geophysical measurements.

During 2003, the services to users were gradually open and have now reached a stable status with satisfactory data acquisition and product generation performances. A total of 77 different types of products are generated amounting to about 140 GBytes of product data per day. Several of these products have been tailored for the meteorology community and are available on Internet in Near Real Time.

An important part of the Envisat data is transmitted to the ground via the ESA data relay satellite, Artemis, providing Europe with data acquisition capabilities for any location worldwide.

The most complete information about the Envisat mission, system, instruments, its products, user services can be found on the Envisat mission web site at <http://envisat.esa.int/>. The web site also includes the latest mission news, such as the problems currently experienced with the MIPAS instrument.

The next Envisat Symposium will take place in Salzburg (Austria) on 6-10 September 2004. Further information can be found on the Envisat mission web site.

4 – Status of CHRIS/Proba Programme

Following a successful year of exploitation in 2003, a new Science Program has been elaborated and implemented for 2004. The 2004 program addresses major objectives identified by ESA including furthering hyperspectral multi-angular mission concepts (e.g. Earth Explorer Candidate SPECTRA), wetland monitoring, retrieval studies, monitoring of forest fires together with the German national satellite BIRD and support to disaster monitoring as part of the International Charter on Space and Major Disasters. A workshop is planned at ESRIN from April 28-30, 2004 to review results achieved to date and fine-tune the planning for this year.

5. - REFERENCES

Further information about the various ESA missions can be found on the following WWW addresses which offers the possibility to download many supporting relevant documentation:

<http://www.esa.int>

<http://earth.esa.int>

<http://envisat.esa.int>

<http://eopi.esa.int>