

ESOC - Important for successful missions

Our visit at the European Space Operation Centre, Darmstadt

When the satellite is successfully launched, only the first steps of a satellite project are carried out. Dependent of what type of mission it is, the management period can be stretched over many years. This is the case for the majority of the scientific missions. Ulysses was launched in 1990 and the mission period is recently extended for four more years, and SOHO is still in orbit more than eight years after launch. The Rosetta mission will, if everything goes as planned, run for more than ten years.

These days the centre carries out the last preparations in order to be ready to take over the management of the Rosetta Mission, only few minutes after the spacecraft has left the launch pad in Korou, French Guiana. We visited the centre only sixteen days before the launch, during a complete prelaunch operation. Firstly, such an operation is carried out to fully test all systems at the centre, and make sure that all connections with Korou, and other stations that participate in the launch team work well. Secondly, though equally important, is the training of the staff that is going to manage the first critical operations.

The Rosetta Spacecraft Operations Manager Dr. Paolo Ferri told us that the team is like an orchestra, individual skills of the members are necessary and the personnel holds a very high professional level. However, individual proficiency has no value if the team does not work well together, and much of the training is also connected to develop team proficiency. Training in order to manage the most unimaginable situations is carried out in simulators and the personnel are called to theoretical and practical examinations regularly. "The teams hold high professional levels, and we have never lost a payload", Paolo Ferri underlined.

ESOC has a row operation room, all dedicated to the different missions. With launch and critical operations, the main operation room was used. When the satellite is in the transfer or operative phases the management is transferred to a sub operation centre, particularly dedicated for the special mission. Today the main activities are

connected to the upcoming launch of Rosetta and the main operation room is at the Rosetta team's disposal, when projects such as Envisat, Cluster II, Integral etc use the secondary operation rooms.

"Most of the missions have special launch windows", Ferri said, i.e. time intervals where the launch must be carried out if the spacecraft is to reach its goal. In order not to miss the comet "Chury", Rosetta must be launched a day between 26 February and 17 March, but only in the 20 minutes' period each day. But there are further restrictions. If the launcher is not lifted away either the first or the second day, the launcher must for technical reasons be moved back to the preparation hall for a re-start of the launch campaign. This campaign takes eight days and the next 20 minutes' window is therefore not accessible for several days in March. If something goes wrong, the window definitely will be closed the 17 March, and the scientists must find a new comet for the second time.



The Rosetta Spacecraft Operations Manager Dr. Paolo Ferri tell about ESOC's role in the launch operations for the Rosetta mission.

Below, a part of the main operation room

