

PRESS RELEASE

CNES TO TAKE PART IN THE INNOVATIVE "PRISMA" PROGRAMME TO MASTER SATELLITE FORMATION-FLYING

The CNES Board of Directors meeting on 15 June 2006, confirmed that France will be participating in the Swedish PRISMA mission. PRISMA was undertaken by the Swedish National Space Board (SNSB) to validate different technologies to enable orbiting satellites to rendezvous and fly in formation. The mastery of formation flying, which is not yet possible, is one of CNES's strategic objectives since this major innovation will revolutionise the ways Space can be used for scientific research and applications for the general public.

The purpose of formation flying is to distribute instrumentation between several satellites whose relative positions and orientations are then coordinated very precisely so as to constitute an extremely large instrument which could not be achieved with a single satellite; for instance, a very long-baseline interferometer (ESA's DARWIN project) or a very long-focal-length telescope (ESA's XEUS project). This will be a major breakthrough to a more sophisticated use of Space.

Perfecting the technology needed for formation flying will give CNES and European industry a leading edge for designing and implementing these future missions.

PRISMA is a Swedish programme undertaken as a multilateral project (between SNSB, CNES, the German DLR and the Danish DTU). Basically a technological mission consisting of two satellites, one of 140kg and the other of 40kg, it has been designed:

- to validate the autonomous control of two satellites flying in formation in low orbit using differential GPS (provided by DLR) and radiofrequency measurements (provided by CNES);
- to demonstrate the autonomous in-flight rendezvous of two satellites using an optical camera (supplied by Denmark);
- to demonstrate operations between two satellites flying within close range of each other (rendezvous and homing);
- to test a cold-gas micro-thruster system (to be supplied by Sweden) which could become a real alternative to electric thrusters.

French flight equipment will be developed by Alcatel Alenia Space France under contract to CNES. This follows a preliminary design and preliminary development phase financed as an R&T activity by CNES on the one hand and by ESA's GSTP programme on the other. Astrium France is contributing by developing algorithms for orbital flight dynamics. The total cost of French participation is 16.447 M€ (in external expenses and personnel).

All flight operations will be controlled by Sweden from its operations centre in Kiruna, which will also be the only ground station used for the mission. The Swedish Space Agency will be the supervising authority. Prime contractorship for the system and the satellite have been entrusted to the Swedish Space Corporation (SSC). The SSC is developing the platform and performing satellite integration and tests. It will also be responsible for the control centre and the launch.

Following the meeting of the Board of Directors, Yannick d'Escatha, CNES President, said that he was delighted with this decision: "With Prisma, CNES is committing itself to a major breakthrough in technology and systems, namely formation flying, which should considerably increase the potential for Space applications".