

## **T2L2 : Time Transfer by Laser Link : Current status**

*E. Samain(1), Ph. Guillemot(2), D. Albanese(1), B. Chauvineau(1), P. Exertier(1), S. Leon(2), O. Minazzoli(1), F. Para(1), J. Paris(1), I. Petitbon (2), J.-M. Torre(1), P. Vrancken(1), J. Weick (1)*

*(1) OCA - Observatoire de la Côte d'Azur, France*

*(2) CNES - Centre National d'Études Spatiales, France*

The T2L2 (Time Transfer by Laser Link) project, developed by CNES and OCA will permit the synchronization of remote ultra-stable clocks and the determination of their performances over intercontinental distances. The principle is derived from laser telemetry technology with dedicated space equipment T2L2 embarked on the satellite Jason 2.

The T2L2 space instrument is based on the detection of laser pulses by two optical subsystems using some avalanche photo-diodes located outside the satellite, in the vicinity of the LRA retro reflector of the Jason 2 satellite. The electronic subsystem is housed inside the satellite. It includes an event timer, a signal conditioning system, a controller and power supplies. The T2L2 scheme will allow an improvement of one to two orders of magnitude as compared to the performances of existing microwave time transfer systems. The space instrument is now fully integrated on the satellite at Thales Alenia Space (Cannes). The satellite will be carried to USA at the beginning of 2008. It will be integrated on a delta launcher to be placed on orbit in June.

After a description of the space instrumentation, we will talk about the ground stations requirements and give the current status of the time transfer projects.