

Remote steering of OCA local time scale using UTC(OP)

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In October 2012, the Géoazur time and frequency laboratory in *Observatoire de la Côte d'Azur* (OCA) has been reorganized to improve signal distribution stability¹. In particular we have implemented a new time scale TA(OCA) based on hydrogen maser T4Science. The H-maser frequency is daily steered with an HROG-10 microphase stepper. The correction applied to the microphase stepper is computed every day taking into account the frequency of the free running maser and the actual time difference between TA(OPC) and UTC(OP). Then the corrected frequency is distributed to lasers stations with various signal distributors. The phase of the OCA H-maser is monitored with two GPS receivers and one Two-Way Satellite Time and Frequency Transfer (TWSTFT) station, in order to estimate the frequency of the free running H-maser.

The main idea is to keep the time difference between our local time scale TA(OCA) and UTC below 50 ns, in order to time tag the laser pulses and to have an error below 1 mm for distance measurement between satellite and laser ranging station. During 2013, preliminary tests have been carried out with LNE-SYRTE. We plan to implement the automated processing in February-March 2014.

This paper explains the daily automated process developed to steer TA(OCA) to UTC(OP), and presents the result of a few months of operation of our local time scale TA(OCA) distributed to laser stations.

¹ M. Laas-Bourez, "Time and frequency distribution improvement in Calern/Geoazur laboratory for T2L2 campaigns", Proc. EFTF 2013.