

# Results of differential calibration of geodetic-type receivers at the ROA

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## 1. General description of the calibration

This report concerns the calibration of the hardware delays incurred by time signals for different geodetic-type GPS systems operated at the ROA in San Fernando.

The systems (receiver+antenna) are designated by a 4-letter acronym.

The link between acronym and actual hardware references may be found [here](#).

The results presented in Section 3 should be used for time transfer with other equipment calibrated using the same procedure. The standard uncertainty on such a link calibration is taken to be 5 ns (1  $\sigma$ ).

## 2. Calibration procedure

The calibration is a differential calibration with respect to a travelling receiver provided by the BIPM. The travelling receiver is referenced to the BIPM reference receiver, presently BPOC, an Ashtech Z12-T (see [TM116](#) for the original calibration of the reference receiver).

The calibration operational procedure is available [here](#). Note that different versions of the document were used, depending on the epoch of calibration; see the annex “Revision history” in the most recent version.

## 3. Calibration results

System	Period	Calib. dates	Travel	Results P1-P2/ns	Operations report
ROAH	2006/08	53949-53962	BPOC	<a href="#">323.7 – 313.7</a> <sup>1</sup>	<a href="#">Report2006_ROA.pdf</a>
ROAP	2008/12	54822-54828	BPOC	<a href="#">317.0 – 309.1</a> <sup>1</sup>	<a href="#">Report2008_ROA.pdf</a>
ROAG	2008/12	54822-54828	BPOC	<a href="#">33.8 – 48.7</a> <sup>2</sup>	<a href="#">Report2008_ROA.pdf</a>
LAZ1	2008/12	54822-54828	BPOC	<a href="#">-0.5 – -0.1</a> <sup>2</sup>	<a href="#">Report2008_ROA.pdf</a>

<sup>1</sup> Delay values include antenna cable.

<sup>2</sup> Values are corrections to the calibrations delays used in the receiver.