

GNSS calibration of SMU receiver with respect to PTB G1 (1202-2024)

Summary

In May 2024, a GNSS receiver owned by the Slovak Institute of Metrology, UTC acronym SMU, was installed at the PTB and calibrated against the Group1 reference station PT13. The method of calibration is the “direct calibration” which comprises just one period of data taking at the PTB.

The operation and report of measurements at the PTB are described in the [report by the PTB](#).

• Results for the calibrated system

The INTDLY values of the SM00 receiver given in Table 1 have been computed by the PTB based on the results of the [1001-2022](#) Group 1 trip for PT13 and should not be updated to reflect later changes in the conventional INTDLY values of PT13.

Since the total uncertainty for a P3/E3/PPP link or a C1 link involving SM00 exceeds the conventional value for direct calibration $U_{CAL0} = 4.0$ ns a term ΔU_{CAL} is summed quadratically to the conventional value.

Changes in the set-up of the receivers after the calibration must be accounted for as described in section A.3.6 of the most recent Calibration guidelines in <https://webtai.bipm.org/ftp/pub/tai/publication/gnss-calibration/guidelines/>.

Table 1. Final P1/P2/C1/E1/E5a INTDLY values from the 1201-2022 trip. Values of REFDLY and CABDLY during the calibration are also indicated for reference, see note 1 (all values in ns). “Meas. Date” refers to the first day of the differential calibration, to which the calibration results can be applied. “Impl. Date” is the MJD when the results should be implemented in the receiver.

System	BIPM	Meas. date	INTDLY P1	INTDLY P2	INTDLY C1	REFDLY	CABDLY	Note	Impl. date	ΔU_{CAL}
SM00	SM00	2024/05/20	186.6	196.0	182.3			(1)	60705	4.5

Notes:

(1) The REFDLY and CABDLY values in PTB report represent the set-up during the measurements at the PTB.

Version history

V1.0 2025/01/27: Publication of results from V1.1 of the PTB calibration report.