GNSS calibration of LRTE receivers with respect to INXE G2 (1201-2025)

Summary

From March to October 2025, National Institute for Metrology, Quality and Technology (INMETRO, UTC la acronym INXE) organized a trip to calibrate a receiver from Laboratório de Referência de Tempo e Espaço (LRTE).
The operations and report of measurements are described in the report by INXE.

- **Final results for the calibrated systems**

The INTDLY values of the receivers given in Table 1 have been computed by INXE based on the results of the Group 2 trip 1012-2020 for INXE (GPS) and should not be updated to reflect later changes in the conventional INTDLY values of the reference receiver.

For a P3/E3/B3/PPP UTC link A-B involving any Group 1 and any receiver in this trip, the uncertainty resulting from the calibration, U_B(A-B), is computed as

$$U_B(A\text{-}B) = (U_{CAL0}^2 + \Delta U_{CAL}(A)^2 + \Delta U_{CAL}(B)^2)^{1/2} \quad (1)$$

where U_{CAL0} = 2.5 ns is the conventional Direct calibration value, and where ΔU_{CAL} (generally zero) is specified for each system.

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 BIPM calibration guidelines.

Table 1. Final P1/P2 INTDLY values from the 1201-2025 exercise. Values of REFDLY and CABDLY during the calibration are also indicated for reference. All values are in ns date in YYYY/MM/DD format. “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	INTLDY		REFDLY	CABDLY	Note	ΔU_{CAL}	Impl. date
			P1	P2					
LRTE	LRTE	2024/06/08	24.9	15.7	47.2	103.1		2.5	

Notes:

Version history
V1.0 2025/11/28: Publication of results from V1.0 of the INXE report.