GPS calibration of NPLI equipment (2003-2017)

Summary

In May 2017, GNSS equipment owned by NPLI was calibrated by the Institute of Photonics and Electronics (UFE). This is considered as a manufacturer calibration, see the report by UFE.

In March 2018, the NPLI conducted a transfer of calibration from the receiver LIAA, originally calibrated, to a new receiver LI2P. The operations and report of measurements are described in the report by NPLI.

- **Final results for the equipment calibrated in the original exercise**

The INTDLY values of the LIAA receiver given in Table 1 have been computed by UFE.

The uncertainty for a P3/PPP link or for a C1 link involving LIAA is U_{CAL0} = 7.0 ns at the time of calibration, as given conventionally to ”manufacturer calibrations”.

Future changes in the set-up of the receivers must be accounted for as described in section A.3.6 of the Calibration guidelines v3.2 in ftp://ftp2.bipm.org/pub/tai/publication/gnss-calibration/guidelines/.

Table 1. Final P1/P2/C1 INTDLY values (in ns) from the 2003-2017 exercise. “Meas. Date” refers to the first day of the differential calibration, to which the calibration results can be applied.

System	BIPM	Meas. Date	INTDLY P1	INTDLY P2	INTDLY C1	Note
LIAA	LIAA	2017/05/14	**-25.9**	**-26.9**	-23.0	

Notes:

- **Transfer of calibration performed by NPLI in March 2018**

The INTDLY values given in Table 2 have been computed by the NPLI using INTDLY values for the receiver LIAA taken in Table 1. ΔU_{CAL} is computed from information in the report by NPLI.

Table 2. Final P1/P2/C1 INTDLY values for LITI. Values of REFDLY (with respect to the indicated REF) and of CABDLY during the calibration are also indicated for reference. “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 were implemented in the receiver. All delay values in ns.

System	BIPM	Meas. date	INTDLY P1	INTDLY P2	INTDLY C1	REF	REFDLY	CABDLY	Note	ΔU_{CAL}	Impl. date
LITI	LI2P	2018/03/10	**59.8**	**63.0**	**61.5**	UTC(NPLI)	284.1	150.0		0.7	58206

Version history
V1.0 2018/03/02: Publication of the manufacturer calibration report of LIAA.
V2.0 2018/03/28: Added the transfer of calibration from LIAA to LI2P performed by the NPLI, see the report by NPLI.