

GPS calibration of KIM and SL equipment with respect to TL G1 (1017-2018)

Summary

Over September 2018 to February 2019, the Chunghwa Telecom Laboratories (TL) conducted a trip to calibrate GNSS equipment owned by RCM-LIPI, Indonesia (BIPM acronym KIM) and by MUSSD, Sri Lanka (BIPM acronym SL). The trip started and finished at the TL, providing closure with respect to TL Group1 reference receiver TLT1.

The operations and report of measurements are described in in the [report by TL](#).

• Final results for the calibrated systems

The INTDLY values of the KIM and SL receivers given in Table 1 have been computed by TL based on the results of the [1001-2018](#) Group 1 trip for TLT1 and should not be updated to reflect later changes in the conventional INTDLY values of the reference receivers.

For a P3/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

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

where $U_{CAL0} = 2.5$ ns at the time of calibration, as given conventionally to Group 2, 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 Calibration guidelines in <ftp://ftp2.bipm.org/pub/tai/publication/gnss-calibration/guidelines/>.

Table 1. Final P1/P2/C1 INTDLY values from the 1017-2018 trip. Values of REFDLY with respect to UTC(k) and of CABDLY during the calibration are also indicated for reference as available. All values are 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	ΔU_{CAL}	Impl. date
KI01	KI01	2018/12/28	68.8	66.8	71.1	0.0	0.0	(1)	0.0	58631
KI02	KI02	2018/12/28	-43.2	-40.7	-41.5	46.0	143.2		0.0	58631
SL01	SL01	2019/02/26	55.7	56.1	57.7	148.9	210.2		0.0	58631

Notes:

(1) Results are Total Delay values (**TOTDLY**).

Version history

V1.0 2019/05/29: Publication of results from V1.2 of the Calibration report, to be implemented in the receivers.