

GNSS calibration of BIRM, JATC, NTSC, SCL and HKO receivers with respect to NIM G1 (1014-2024)

Summary

From June 2024 to June 2025, NIM conducted a trip to calibrate GNSS equipment owned by BIRM, JATC, NTSC, SCL and HKO. The trip started and finished at NIM, providing closure with respect to the NIM Group1 reference receivers.

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

• Final results for the calibrated systems

The INTDLY values of the receivers given in Table 1 have been computed by NIM based on the results of the Group 1 trip [1001-2022](#) for IM02 (GPS, Galileo and BDS) 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

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

where $U_{CAL0} = 2.5$ ns is the conventional Group 2 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/E1/E5a/B1C/B2a INTDLY values from the 1014-2024 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	INTDLY			REFDLY	CABDLY	Note	ΔU_{CAL}	Impl. date
			C1	P1	P2					
BI07	BI07	2024/06/02	-13.3	-15.4	-9.6	229.4	213.7		0.0	61310
JA01	JA01	2024/07/30	236.7	233.5	229.8	207.5	134.7		0.0	
JA02	JA02	2024/07/30	198.0	195.0	192.7	191.9	-	(1)	0.0	
NT02	NT02	2024/10/01	193.9	192.6	197.3	112.1	-	(1)	0.0	
NT03	NT03	2024/10/01	195.5	194.2	194.0	115.8	-	(1)	0.0	
NT05	NT05	2024/10/01	196.2	193.6	191.2	104.6	-	(1)	0.0	
SC05	SC05	2025/01/03	20.1	17.3	16.8	10.0	512		0.0	61312
SC07	SC07	2025/01/03	32.6	30.5	27.9	55.5	503.0		0.0	61312
SC08	SC08	2025/01/03	32.3	30.3	27.0	54.9	503.0		0.0	61312
HK01	HK01	2025/04/14	-7.7	-10.1	-11.3	-49.8	333.9		0.0	61311

Notes:

(1) For Receiver with no CABDLY the values in the INTDLY columns refer to the SYSDLYs

Version history

V1.0 2026/10/14: Publication of results from V2.0 of the NIM report.