

# GPS transfer of calibration at SP (1106-2020)

## Summary

In August 2020, the Research Institutes of Sweden AB (RISE, UTC acronym SP) conducted a transfer of calibration from its G2-calibrated GPS receivers SP06 to two receivers with a new antenna (SP01 and SP02) and to a new receiver SP07.

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

- **Final results for the calibrated systems**

The INTDLY values of the receivers given in Table 1 have been computed by SP based on the results of the Group 2 trip [1014-2019](#) for SP06 and should not be updated to reflect later changes in the conventional INTDLY values of the reference receiver.

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 is composed of the conventional Group 2 value (2.5 ns) and the uncertainty of the transfer (0.4 ns), and where  $\Delta U_{CAL}$  (generally zero) is specified for each system. For UTC use, the ageing uncertainty will be based on the date of original calibration of SP06 i.e. 2019/03/30.

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 TOTDLY values from the 1106-2020 exercise. 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	TOTDLY P1	TOTDLY P2	Note	$\Delta U_{CAL}$	Impl. date
SP01	SP01	2020/08/14	<b>242.7</b>	<b>251.5</b>		0.0	59121
SP02	SP02	2020/08/14	<b>244.1</b>	<b>250.3</b>		0.0	59121
SP07	SP07	2020/08/14	<b>231.6</b>	<b>228.0</b>		0.0	59121

Notes:

(1).

Version history

V1.0 2020/09/29: Publication of results from V2 of the SP report on the transfer of calibration.