

BIPM CALIBRATIONS OF GPS/GLONASS TIME EQUIPMENT

BIPM differential calibrations of GPS/GLONASS

time equipment

Uncertainty 3 ns (1 σ)

- In 2003/2006 six campaigns were carried out
 - 2004: OP, PTB, NPL, VSL
 - 2005: OP, NTSC, HKO, TL, SG, AUS, KRIS, NMIJ, NICT
 - 2005: OP, TCC, ONBA, IGMA, CNMP
 - 2006: OP, CNM, NIST, USNO, NRC
 - 2006: BIPM, OP, PTB, AOS, USNO, NRL, CSIR
 - 2006: OP, AOS, GUM, LT, TP, BEV, OMH, NIMB, NMC, ZMDM
- In total 20 laboratories out of the 50 that participate in TAI have been calibrated, and additional 10 this autumn.



PTB

Date	UTC(i)–UTC(j)	Differential correction	Estimated uncertainty	Author
		/ns	/ns	
Oct 86	UTC(PTB) –UTC(OP)	+9	2	Lewandowski, Weiss
Oct 94	UTC(PTB) –UTC(OP)	+4	2	Lewandowski, Baumont
July 97	UTC(PTB) –UTC(OP)	+2	3	Lewandowski, Moussay
Nov 97	UTC(PTB) –UTC(OP)	+4	2	Lewandowski, Moussay
Mar 98	UTC(PTB) –UTC(OP)	–6	2	Lewandowski, Moussay
June 98	UTC(PTB) –UTC(OP)	+5	3	Lewandowski, Konate
June 03	UTC(PTB) –UTC(OP)	–5	4	Rapport BIPM –2003/05
August 03	UTC(PTB) –UTC(OP)	0	3	Rapport BIPM –2003/06
July 04	UTC(PTB) –UTC(OP)	0	3	Rapport BIPM –2006

NPL

Date	UTC(i)–UTC(j)	Differential correction /ns	Estimated uncertainty /ns	Author
Oct 86	UTC(NPL) –UTC(OP)	+24	2	Lewandowski, Weiss
Mar 94	UTC(NPL) –UTC(OP)	+6	2	Thomas, Moussay
Oct 94	UTC(NPL) –UTC(OP)	0	3	Lewandowski, Baumont
Jun 97	UTC(NPL) –UTC(OP)	–4	3	Lewandowski, Moussay
Nov 97	UTC(NPL) –UTC(OP)	–2	2	Lewandowski, Moussay
Mar 98	UTC(NPL) –UTC(OP)	+4	2	Lewandowski, Moussay
July 98	UTC(NPL) –UTC(OP)	–	–	Lewandowski, Konate
June 02	UTC(NPL) –UTC(OP)	–6	4	Rapport BIPM –2003/04
May 03	UTC(NPL) –UTC(OP)	–10	3	Rapport BIPM –2003/06
July 04	UTC(NPL) –UTC(OP)	–17	3	Rapport BIPM –2006

VSL

Date	UTC(i)–UTC(j)	Differential correction /ns	Estimated uncertainty /ns	Author
Oct 86	UTC(VSL) –UTC(OP)	–17	2	Lewandowski, Weiss
Oct 94	UTC(VSL) –UTC(OP)	+3	2	Lewandowski, Baumont
May 95	UTC(VSL) –UTC(OP)	+5	2	Lewandowski
Jun 97	UTC(VSL) –UTC(OP)	–2	3	Lewandowski, Moussay
Nov 97	UTC(VSL) –UTC(OP)	–23	2	Lewandowski, Moussay
Feb 98	UTC(VSL) –UTC(OP)	–20	2	Lewandowski, Moussay
July 98	UTC(VSL) –UTC(OP)	–	–	Lewandowski, Konate
June 02	UTC(VSL) –UTC(OP)	+16	4	Rapport BIPM –2003/04
June 03	UTC(VSL) –UTC(OP)	+8	3	Rapport BIPM –2003/95
July 04	UTC(VSL) –UTC(OP)	+7	8	Rapport BIPM –2006

CONCLUSION

- **BIPM will continue its GPS/GLONASS calibration campaigns; a new temperature-stabilized receiver is now dedicated for this purpose.**
- **A new GPS/GLONASS trip involving six laboratories is now beginning.**
- **BIPM is helping to organize GPS/GLONASS calibration campaigns by the regional metrology organizations.**