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BUREAU INTERNATIONAL DES POIDS ET MESURES
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1 - Coordinated Universal Time UTC and its local realizations UTC(k). Computed values of [*UTC-UTC*(*k*)] and uncertainties valid for the period of this Circular. From 2009 January 1, 0h UTC, *TAI-UTC* = 34 s.

Date 2009/10 0h UTC	DEC 29	JAN 3	JAN 8	JAN 13	JAN 18	JAN 23	JAN 28	Uncertainty/ns			Notes
MJD	55194	55199	55204	55209	55214	55219	55224	u_A	u_B	u	
Laboratory *k*	[*UTC-UTC*(*k*)]/ns										
AOS (Borowiec)	-0.5	-0.9	3.9	8.3	8.2	6.9	5.6	1.5	5.2	5.4	
APL (Laurel)	-30.2	-27.9	-25.8	-42.4	-51.1	-30.2	-16.3	1.5	5.2	5.4	
AUS (Sydney)	591.6	569.3	549.7	522.8	505.4	478.6	448.6	0.4	5.1	5.1	
BEV (Wien)	46.9	42.9	44.7	41.6	42.8	44.1	39.4	1.5	3.2	3.6	
BIM (Sofiya)	-6878.1	-6889.9	-6879.7	-6885.3	-6876.9	-6881.9	-6886.1	2.0	7.1	7.4	
BIRM (Beijing)	-9494.3	-9535.7	-9572.3	-9602.7	-9636.0	-9670.2	-9700.9	2.0	20.0	20.1	
BY (Minsk)	37.6	46.9	53.3	59.9	63.0	-36.4	-25.2	2.0	7.1	7.4	(1)
CAO (Cagliari)	-3807.4	-3827.0	-3838.4	-3855.0	-3875.4	-3895.3	-3894.9	1.5	7.1	7.2	
CH (Bern)	-1.9	0.9	-2.8	-1.4	0.1	-3.5	2.1	0.6	1.6	1.7	
CNM (Queretaro)	6.3	-3.4	-12.4	-10.1	1.7	1.2	-5.1	2.5	5.1	5.7	
CNMP (Panama)	61.9	59.2	69.2	68.2	76.9	82.1	77.8	3.0	5.1	6.0	
DLR (Oberpfaffenhofen)	4.2	6.0	8.7	5.0	7.0	11.6	12.4	0.4	5.1	5.2	
DMDM (Belgrade)	6582.8	-1.2	9.0	7.3	7.4	7.4	20.4	2.0	7.1	7.4	(2)
DTAG (Frankfurt/M)	-493.9	-495.1	-513.9	-515.7	-523.3	-545.1	-557.5	0.4	10.0	10.0	
EIM (Thessaloniki)	22.0	0.7	7.4	5.0	5.5	8.5	2.1	3.5	5.2	6.2	
HKO (Hong Kong)	64.2	67.2	80.1	89.3	88.8	92.1	87.5	2.5	5.2	5.7	
IFAG (Wettzell)	-105.4	-94.3	-85.5	-85.6	-85.2	-91.9	-80.3	0.4	5.1	5.1	
IGNA (Buenos Aires)	-	-	-	-	-	-	-	-	-	-	
INPL (Jerusalem)	-	-	-	-	-	-	-	-	-	-	
INTI (Buenos Aires)	20.6	3.1	-13.5	-13.7	-30.8	-48.5	-59.8	4.0	20.0	20.4	
IPQ (Caparica)	158.3	164.3	171.8	176.2	175.6	181.9	182.6	1.5	7.1	7.3	
IT (Torino)	-0.7	-1.3	1.7	2.8	3.2	4.1	6.0	0.6	1.7	1.8	
JATC (Lintong)	8.7	6.0	7.1	2.2	5.0	6.4	2.6	0.5	4.9	5.0	
JV (Kjeller)	1026.1	1296.5	1547.1	1812.4	2041.7	2317.8	2553.1	5.0	20.0	20.7	
KIM (Serpong-Tangerang)	-125.8	-114.5	-124.9	-137.6	-161.8	-153.6	-146.6	3.0	20.0	20.3	
KRIS (Daejeon)	3.2	-5.5	0.4	-1.2	0.8	-3.6	-0.3	0.4	5.1	5.1	
KZ (Astana)	-2256.3	-2296.7	-2335.1	19.0	-24.3	-69.2	-101.8	2.0	20.0	20.1	(3)
LT (Vilnius)	838.9	814.8	809.7	840.6	831.7	830.0	817.8	2.0	5.1	5.5	
LV (Riga)	3886.3	3890.2	3906.4	3920.4	3936.5	3957.5	3986.0	1.5	7.1	7.3	
MIKE (Espoo)	0.2	-1.1	0.2	0.9	0.6	-0.3	-0.3	0.4	7.1	7.1	

Date 2009/10 0h UTC	DEC 29	JAN 3	JAN 8	JAN 13	JAN 18	JAN 23	JAN 28	Uncertainty/ns			Notes
MJD	55194	55199	55204	55209	55214	55219	55224	u_A	u_B	u	
Laboratory *k*				[*UTC-UTC*(*k*)]/ns							
MKEH (Budapest)	-29726.1	-29946.8	-30151.9	-30356.8	-30567.8	-30774.9	-30972.0	2.5	20.0	20.2	
MSL (Lower Hutt)	-99.8	-90.2	-86.6	-82.1	-85.5	-98.1	-98.2	1.0	20.0	20.1	
NAO (Mizusawa)	364.0	370.1	373.0	372.6	371.6	370.7	365.5	3.0	20.0	20.3	
NICT (Tokyo)	-5.9	-7.6	-8.4	-8.9	-8.4	-9.5	-8.1	0.3	4.6	4.7	
NIM (Beijing)	12.3	7.9	13.2	17.0	16.9	19.9	36.5	1.0	20.0	20.1	(4)
NIMB (Bucharest)	-392.7	-385.6	-396.2	-393.0	-391.3	-414.0	-408.6	0.4	20.0	20.0	
NIMT (Pathumthani)	-831.7	-840.8	-851.6	-869.6	-888.8	-905.4	-915.2	1.0	19.9	19.9	
NIS (Cairo)	14.7	9.5	14.5	21.1	30.1	30.5	30.2	1.5	7.1	7.2	
NIST (Boulder)	15.0	15.0	12.1	10.1	8.0	5.7	4.2	0.6	4.9	4.9	
NMIJ (Tsukuba)	4.4	1.8	2.8	2.8	2.6	-0.5	-5.1	0.4	5.2	5.2	
NMLS (Sepang)	-834.0	-1235.0	-1573.7	-1886.6	261.4	278.8	275.3	2.0	20.0	20.1	(5)
NPL (Teddington)	-1.3	-6.5	-12.1	-17.4	-24.2	-31.0	-34.9	0.6	5.1	5.1	
NPLI (New-Delhi)	-0.6	0.4	7.3	12.9	22.1	17.0	19.0	2.5	7.1	7.5	
NRC (Ottawa)	-20.6	-16.0	-15.6	-11.9	-7.6	0.1	4.3	0.4	5.1	5.1	
NRL (Washington DC)	3.6	5.0	7.8	9.0	10.5	9.2	7.5	0.4	5.1	5.2	
NTSC (Lintong)	8.4	7.1	7.1	7.5	9.7	9.2	8.7	0.5	4.8	4.9	
ONBA (Buenos Aires)	-2706.6	-2718.1	-2743.8	-2766.2	-2778.9	-2799.7	-2825.7	2.5	5.1	5.7	
ONRJ (Rio de Janeiro)	16.8	8.0	0.3	-0.6	-3.4	-3.1	8.8	4.0	19.8	20.2	
OP (Paris)	-7.1	-7.3	-8.3	-7.3	-14.6	-21.3	-25.1	0.7	1.6	1.8	
ORB (Bruxelles)	22.3	14.7	8.6	-0.4	3.2	7.5	5.8	0.4	5.1	5.1	
PL (Warszawa)	-24.6	-26.0	-13.0	-10.6	-10.6	-5.6	-4.8	1.5	5.0	5.2	
PTB (Braunschweig)	8.9	5.8	6.2	7.6	5.0	3.8	3.2	0.2	1.3	1.3	
ROA (San Fernando)	-4.7	-1.5	1.4	3.2	0.7	-4.1	-6.2	0.6	5.1	5.1	
SCL (Hong Kong)	-37.8	-38.7	-34.9	-17.9	-27.7	-10.6	-11.0	3.0	10.0	10.4	
SG (Singapore)	17.7	19.0	23.4	26.3	20.0	15.1	13.9	0.4	5.1	5.2	
SIQ (Ljubljana)	-416.4	-429.6	-417.1	-440.0	-424.9	-427.3	-409.9	5.0	20.0	20.6	
SMD (Bruxelles)	25.4	12.4	17.6	10.9	4.7	5.6	1.2	1.5	19.6	19.7	
SMU (Bratislava)	-	-7.8	-9.1	-15.0	-23.9	-32.5	-38.6	1.5	20.0	20.1	
SP (Boras)	-3.0	-8.0	-10.4	-10.8	-13.4	-20.1	-24.1	0.6	1.6	1.7	
SU (Moskva)	-2.3	-2.9	-1.2	2.5	1.4	1.0	3.4	1.5	5.1	5.3	
TCC (Concepcion)	332.2	339.2	357.4	357.1	362.1	373.8	377.6	0.4	19.8	19.8	
TL (Chung-Li)	-11.5	-11.0	-8.4	-8.1	-9.6	-11.2	-11.5	0.4	4.9	4.9	
TP (Praha)	-15.5	-18.4	-16.9	-11.5	-10.5	-17.6	-19.7	0.4	5.1	5.1	
UA (Kharkov)	-69.0	-90.7	-97.4	-86.3	-	-73.8	-67.1	2.5	6.1	6.6	
UME (Gebze-Kocaeli)	142.0	133.3	127.1	127.2	120.0	112.8	108.0	1.5	7.1	7.3	
USNO (Washington DC)	4.1	9.0	7.8	5.5	5.2	3.5	2.8	0.5	2.4	2.4	
VMI (Ha Noi)	-16.5	-13.1	-5.3	1.5	1.2	3.2	5.5	1.0	20.0	20.0	
VSL (Delft)	-16.8	-21.1	4.9	24.2	22.3	1.4	-11.0	0.8	1.6	1.8	
ZA (Pretoria)	-	-	-	-	-	-	-	-	-	-	

- Notes on section 1:
(1) BY : Time step of UTC(BY) of +100 ns on MJD 55219.0.
(2) DMDM : Apparent time step of UTC(DMDM) of about +6580 ns between MJD 55194 and 55199.
(3) KZ : Time step of UTC(KZ) of -2400 ns on MJD 55208.0.
(4) NIM : Change of master clock on MJD 55219.0.
(4) NIM : Time step of UTC(NIM) of -15.6 ns on MJD 55224.0 due to change of calibration.
(5) NMLS : Time step of UTC(NMLS) of -2120 ns due to change of master clock on MJD 55209.06.

2 - International Atomic Time TAI and Local atomic time scales TA(k). Computed values of [*TAI-TA*(*k*)].

Date 2009/10 0h UTC	DEC 29	JAN 3	JAN 8	JAN 13	JAN 18	JAN 23	JAN 28	
MJD	55194	55199	55204	55209	55214	55219	55224	
Laboratory *k*				[*TAI-TA*(*k*)]/ns				
CH (Bern)	47737.9	47689.9	47635.2	47585.7	47537.2	47482.3	47438.2	
F (Paris)	168001.0	167996.1	167995.3	167992.8	167986.8	167987.6	167985.8	
IT (Torino)	88806.0	88945.2	89091.5	89231.8	89377.7	89521.3	89664.0	
JATC (Lintong)	-47255.1	-47277.7	-47300.6	-47323.5	-47347.1	-47372.1	-47397.9	
KRIS (Daejeon)	30702.2	30761.2	30833.6	30898.8	30967.6	31030.0	31099.5	
NICT (Tokyo)	60.2	55.2	50.2	46.8	42.1	36.8	33.0	
NIST (Boulder)	-45343317.3	-45343507.3	-45343700.2	-45343892.2	-45344084.3	-45344276.6	-45344468.1	
NRC (Ottawa)	29519.3	29489.8	29456.3	29426.2	29396.3	29370.4	29340.1	
NTSC (Lintong)	9680.6	9708.7	9736.4	9765.3	9791.9	9819.3	9845.6	
ONRJ (Rio de Janeiro)	-6294.2	-6324.9	-6359.8	-6390.1	-6427.8	-6467.0	-6505.1	
PL (Warszawa)	-6168.3	-6194.4	-6205.3	-6221.8	-6244.8	-6265.7	-6284.3	
PTB (Braunschweig)	-356544.3	-356542.4	-356537.1	-356530.6	-356528.2	-356524.5	-356520.1	
SG (Singapore)	6728.2	6727.5	6730.5	6733.3	6731.4	6731.0	6734.0	
SU (Moskva)	27259175.1	27259296.3	27259419.9	27259545.4	27259666.6	27259788.4	27259913.1	(1)
TL (Chung-Li)	-425.2	-438.4	-451.6	-465.6	-481.0	-495.6	-507.8	
USNO (Washington DC)	-35056437.6	-35056732.7	-35057032.6	-35057332.4	-35057629.6	-35057928.2	-35058225.9	

- Note on section 2:
(1) SU : Listed values are *TAI-TA*(*SU*) - 2.80 seconds.

3 - Difference between the normalized frequencies of EAL (free atomic time scale) and TAI.

	Interval of validity	*f*(*EAL*)-*f*(*TAI*)	
Steering correction	55194 - 55224	6.671×10^{-13}	(2009 DEC 29 - 2010 JAN 28)
New correction	55224 - 55254	6.666×10^{-13}	(2010 JAN 28 - 2010 FEB 27)
New correction foreseen	55254 - 55284	6.661×10^{-13}	(2010 FEB 27 - 2010 MAR 29)

4 - Duration of the TAI scale interval.

TAI is a realization of coordinate time TT. The following tables give the fractional deviation d of the scale interval of TAI from that of TT (the SI second on the geoid), i.e. the fractional frequency deviation of TAI with the opposite sign: $d = -y_{TAI}$. In this section, a frequency over a time interval is defined as the ratio of the end-point phase difference to the duration of the interval. Whenever needed, the instability of EAL should be expressed as the quadratic sum of three components with τ in days: (1) a white frequency noise of $2.0 \times 10^{-15} / \sqrt{\tau}$, (2) a flicker frequency noise of 0.4×10^{-15} and (3) a random walk frequency noise of $1.0 \times 10^{-16} \times \sqrt{\tau}$. The relation between EAL and TAI is given in *Circular T* and the *BIPM Annual Report on Time Activities*.

In the first table, d is obtained, on the given periods of estimation by comparison of the TAI frequency with that of the given individual Primary Frequency Standards (PFS). In this table: u_A is the uncertainty originating in the instability of the PFS, u_B is the combined uncertainty from systematic effects, $u_{l/lab}$ is the uncertainty in the link between the PFS and the clock participating to TAI, including the uncertainty due to the dead-time, $u_{l/TAI}$ is the uncertainty in the link to TAI, u is the quadratic sum of all four uncertainty values. Ref(u_B) is a reference giving information on the values of u_B or is the *Circular T* where the reference was first given. u_B(Ref) is the u_B value stated in this references. Note that all uncertainties may vary over time and that the current u_B values are generally not the same as the peer reviewed values given in Ref(u_B). See “http://www.bipm.org/jsp/en/TimeFtp.jsp” for previous issues of *Circular T* and *individual Reports of Evaluation of Primary Frequency Standards* that explain changes in uncertainties. All values are expressed in 10^{-15} and are valid only for the stated period of estimation.

Standard	Period of Estimation	d	u_A	u_B	$u_{l/Lab}$	$u_{l/Tai}$	u	Ref(u_B)	u_B(Ref)	Note
PTB-CS1	55194 55224	-2.86	5.00	8.00	0.00	0.13	9.43	T148	8.	(1)
PTB-CS2	55194 55224	7.63	3.00	12.00	0.00	0.13	12.37	T148	12.	(1)
IT-CsF1	55194 55214	2.71	0.60	0.60	0.50	0.52	1.11	T233	0.50	(2)
NICT-CsF1	55189 55214	4.09	1.00	0.90	0.30	0.23	1.40	T236	1.9	(3)
SYRTE-JPO	55194 55224	3.89	0.61	6.30	0.30	0.43	6.35	T160	6.30	(4)
SYRTE-FO1	55199 55224	4.90	0.20	0.41	0.11	0.54	0.71	T227	0.72	(5)
SYRTE-FO2	55194 55224	5.50	0.35	0.38	0.10	0.43	0.68	T227	0.65	(5)

Notes:
(1) Continuously operating as a clock participating to TAI
(2) Report 29 JAN. 2010 by INRIM
(3) Report 04 FEB. 2010 by NICT
(4) Report 01 FEB. 2010 by LNE-SYRTE
(5) Report 02 FEB. 2010 by LNE-SYRTE

The second table gives the BIPM estimate of d, based on all available PFS measurements over the period MJD 54834-55224, taking into account their individual uncertainties and characterizing the instability of EAL as noted above. u is the computed standard uncertainty of d

Period of estimation	d	u	
55194-55224	4.6×10^{-15}	0.4×10^{-15}	(2009 DEC 29 - 2010 JAN 28)

5 - Relations of UTC and TAI with GPS time and GLONASS time.

[*UTC-GPS time*] = -15 s + C_0, [*TAI-GPS time*] = 19 s + C_0, global uncertainty is of order 10 ns.
[*UTC-GLONASS time*] = 0 s + C_1, [*TAI-GLONASS time*] = 34 s + C_1, global uncertainty is of order hundreds ns.

The C_0 values provide a realization of GPS time, as obtained using the values [*UTC-UTC*(*OP*)] and the GPS data taken at the Paris Observatory, corrected for IGS precise orbits, clocks and ionosphere maps. The C_1 values provide a realization of GLONASS time, as obtained using the values [*UTC-UTC*(*AOS*)] and the GLONASS data taken at the Astrogeodynamical Observatory Borowiec (AOS). N_0 and N_1 are the numbers of measurements, when N_0 or N_1 is 0, the corresponding values of C_0 or C_1 are interpolated.
The standard deviations σ_0 and σ_1 characterize the dispersion of individual measurements. The actual uncertainty of user's access to GPS and GLONASS times may differ from these values. For this circular, σ_0 = 2.8 ns, σ_1 = 14.0 ns

Date 2009/10 0h UTC	MJD	C_0/ns	N_0	C_1/ns	N_1
DEC 29	55194	5.5	46	-225.7	65
DEC 30	55195	1.0	44	-226.0	55
DEC 31	55196	-0.5	46	-224.4	62
JAN 1	55197	-1.3	47	-225.4	59
JAN 2	55198	-2.9	47	-225.4	59
JAN 3	55199	0.8	48	-219.8	60
JAN 4	55200	2.2	46	-216.8	71
JAN 5	55201	3.9	47	-217.2	63
JAN 6	55202	7.0	46	-214.3	67
JAN 7	55203	7.5	48	-209.1	74
JAN 8	55204	5.2	48	-209.6	69
JAN 9	55205	8.8	45	-207.8	69
JAN 10	55206	11.0	46	-207.9	66
JAN 11	55207	10.0	46	-207.0	64
JAN 12	55208	8.1	48	-201.3	70
JAN 13	55209	3.1	48	-198.3	73
JAN 14	55210	1.1	44	-197.0	67
JAN 15	55211	-1.9	44	-197.7	67
JAN 16	55212	-3.8	48	-199.4	67
JAN 17	55213	-0.6	46	-196.0	64
JAN 18	55214	1.4	29	-191.4	66
JAN 19	55215	-2.0	19	-188.9	78
JAN 20	55216	-2.5	49	-188.4	84
JAN 21	55217	-2.6	48	-190.1	83
JAN 22	55218	-0.7	48	-195.0	78
JAN 23	55219	-1.0	48	-198.1	82
JAN 24	55220	-1.3	47	-194.1	82
JAN 25	55221	-0.1	45	-189.1	75
JAN 26	55222	1.3	46	-190.0	80
JAN 27	55223	0.7	43	-194.9	79
JAN 28	55224	0.4	47	-196.2	64

6 - Time links used for the computation of TAI and their uncertainties.

The time links used in the elaboration of this *Circular T* are listed in this section. The technique for the link is indicated as follows: GPS SC for GPS all-in-view single-channel C/A data; GPS MC for GPS all-in-view multi-channel C/A data; GPS P3 for GPS all-in-view multi-channel dual-frequency P code data; GPS PPP for GPS Precise Point Positioning technique; GPS GT for 'GPS time' observations; GLN MC for GLONASS common-view multi-channel C/A data; INT LK for internal cable link and TWSTFT for two-way satellite time and frequency transfer data.

For each link, the following uncertainties are provided: u_A is the statistical uncertainty evaluated by taking into account the level of phase noise in the raw data, the interpolation interval between data points and the effects with typical duration between 5 and 30 days. u_B is the estimated uncertainty on the calibration.

The calibration type of the link is indicated as: GPS EC for GPS equipment calibration; TW EC for two-way equipment calibration; LC (technique) for a link calibrated using 'technique'; BC (technique) for a link calibrated using 'technique' to transfer a past equipment calibration through a discontinuity of link operation. DIC is used for direct internal calibration.
The calibration dates indicate: the most recent calibration results for the two laboratories in the case of EC and
the most recent calibration of the link in the case of LC and BC,
NA stands for not available, in this case estimated values are provided

Link	Type	u_A/ns	u_B/ns	Calibration Type	Calibration Dates
AOS /PTB	GPS MC	1.5	5.0	GPS EC/GPS EC	2007 Jan/2006 Sep
APL /PTB	GPS MC	1.5	5.0	GPS EC/GPS EC	2003 Dec/2006 Sep
AUS /PTB	GPSPPP	0.3	5.0	LC(GPS MC)	2009 Nov
BEV /PTB	GPS MC	1.5	3.0	BC(TWSTFT)	2008 Jan
BIM /PTB	GPS MC	2.0	7.0	GPS EC/GPS EC	2007 Nov
BIRM/PTB	GPS MC	2.0	20.0	NA /GPS EC	NA /2006 Sep
BY /PTB	GPS MC	2.0	7.0	GPS EC/GPS EC	2008 Jun/2006 Sep
CAO /PTB	GPS MC	1.5	7.0	GPS EC/GPS EC	2004 Nov/2006 Sep
CH /PTB	TWSTFT	0.6	1.0	LC(TWSTFT)/BC(GPS PPP)	2008 Sep/2009 Aug
CNM /PTB	GPS MC	2.5	5.0	BC(GPS SC)	2008 May
CNMP/PTB	GPS MC	3.0	5.0	GPS EC/GPS EC	2004 May/2006 Sep
DLR /PTB	GPSPPP	0.3	5.0	GPS EC/GPS EC	2007 Feb/2004 Aug
DMDM/PTB	GPS MC	2.0	7.0	GPS EC/GPS EC	2007 Jan/2006 Sep
DTAG/PTB	GPSPPP	0.3	10.0	LC(GPS MC)	2009 Jul
EIM /PTB	GPS MC	3.5	5.0	GPS EC/GPS EC	2007 May/2003 Aug
HKO /PTB	GPS MC	2.5	5.0	GPS EC/GPS EC	2004 Sep/2006 Sep
IFAG/PTB	GPSPPP	0.3	5.0	GPS EC/GPS EC	2003 Jun/2004 Aug
IGNA/PTB	NA				
INPL/PTB	NA				
INTI/PTB	GPS MC	4.0	20.0	NA /GPS EC	NA /2006 Sep

Link	Type	u_A/ns	u_B/ns	Calibration Type	Calibration Dates
IPQ /PTB	GPS MC	1.5	7.0	GPS EC/GPS EC	2009 Feb/2006 Sep
IT /PTB	TWSTFT	0.6	1.2	LC(TWSTFT)/BC(GPS PPP)	2008 Sep/2009 Aug
JATC/NTSC	INT LK	0.2	1.0	DIC	/2006 Sep
JV /PTB	GPS GT	5.0	20.0	NA /GPS EC	NA /2003 Aug
KIM /PTB	GPS MC	3.0	20.0	NA /GPS EC	NA /2006 Sep
KRIS/PTB	GPSPPP	0.3	5.0	GPS EC/GPS EC	2005 Aug/2004 Aug
KZ /PTB	GPS MC	2.0	20.0	NA /GPS EC	NA /2006 Sep
LT /PTB	GPS MC	2.0	5.0	GPS EC/GPS EC	2006 Oct/2006 Sep
LV /PTB	GPS MC	1.5	7.0	GPS EC/GPS EC	2006 Feb/2006 Sep
MIKE/PTB	GPSPPP	0.3	7.0	NA /GPS EC	NA /2004 Aug
MKEH/PTB	GPS SC	2.5	20.0	NA /GPS EC	NA /2006 Sep
MSL /PTB	GPS P3	1.0	20.0	NA /GPS EC	NA /2004 Aug
NAO /PTB	GPS MC	3.0	20.0	NA /GPS EC	NA /2006 Sep
NICT/PTB	GPSPPP	0.3	5.0	GPS EC/GPS EC	2005 Jun/2004 Aug
NIM /PTB	GPS P3	1.0	20.0	NA /GPS EC	NA /2004 Aug
NIMB/PTB	GPSPPP	0.3	20.0	LC(GPS MC)	2010 Jan
NIMT/PTB	GPS P3	1.0	20.0	NA /GPS EC	NA /2004 Aug
NIS /PTB	GPS MC	1.5	7.0	GPS EC/GPS EC	2005 May/2006 Sep
NIST/PTB	TWSTFT	0.6	5.0	LC(TWSTFT)/BC(GPS PPP)	2005 May/2009 Aug
NMIJ/PTB	GPSPPP	0.3	5.0	GPS EC/GPS EC	2002 Apr/2004 Aug
NMLS/PTB	GPS MC	2.0	20.0	NA /GPS EC	NA /2006 Sep
NPL /PTB	TWSTFT	0.6	5.0	LC(GPS P3)	2008 Sep/2009 Nov
NPLI/PTB	GPS MC	2.5	7.0	GPS EC/GPS EC	2005 Jul/2006 Sep
NRC /PTB	GPSPPP	0.3	5.0	GPS EC/GPS EC	2003 Nov/2004 Aug
NRL /PTB	GPSPPP	0.3	5.0	GPS EC/GPS EC	2002 May/2004 Aug
NTSC/PTB	TWSTFT	0.5	5.0	BC(GPS MC)	2009 May
ONBA/PTB	GPS MC	2.5	5.0	GPS EC/GPS EC	2004 Jul/2006 Sep
ONRJ/PTB	GPS MC	4.0	20.0	NA /GPS EC	NA /2006 Sep
OP /PTB	TWSTFT	0.7	1.1	LC(TWSTFT)/BC(GPS PPP)	2008 Sep/2009 Aug
ORB /PTB	GPSPPP	0.3	5.0	GPS EC/GPS EC	2003 Jul/2004 Aug
PL /PTB	GPS MC	1.5	5.0	GPS EC/GPS EC	2006 Oct/2006 Sep
ROA /PTB	TWSTFT	0.6	5.0	LC(TWSTFT)/BC(GPS PPP)	2005 May/2009 Aug
SCL /PTB	GPS MC	3.0	10.0	LC(GPS SC)	1993 May
SG /PTB	GPSPPP	0.3	5.0	LC(GPS MC)	2009 Jun
SIQ /PTB	GPS SC	5.0	20.0	NA /GPS EC	NA /2003 Aug
SMD /PTB	GPS MC	1.5	20.0	NA /GPS EC	NA /2006 Sep
SMU /PTB	GPS MC	1.5	20.0	NA /GPS EC	NA /2006 Sep
SP /PTB	TWSTFT	0.6	1.0	LC(TWSTFT)/BC(GPS PPP)	2006 Mar/2009 Aug
SU /PTB	GLN MC	1.5	5.0	LC(GPS MC)	2009 May
TCC /PTB	GPSPPP	0.3	20.0	NA /GPS EC	NA /2004 Aug
TL /PTB	GPSPPP	0.3	5.0	GPS EC/GPS EC	2005 May/2004 Aug
TP /PTB	GPSPPP	0.3	5.0	GPS EC/GPS EC	2009 Feb/2004 Aug
UA /PTB	GPS MC	2.5	6.0	GPS EC/GPS EC	2006 Jun/2006 Sep
UME /PTB	GPS MC	1.5	7.0	GPS EC/GPS EC	2005 Dec/2006 Sep
USNO/PTB	TWSTFT	0.6	3.0	BC(TW X)/BC(GPS PPP)	2005 May/2010 Jan
VMI /PTB	GPS P3	1.0	20.0	NA /GPS EC	NA /2004 Aug
VSL /PTB	TWSTFT	0.8	1.0	LC(TWSTFT)/BC(GPS PPP)	2006 Mar/2009 Aug
ZA /PTB	NA				