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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 2010/11 0h UTC	DEC 29	JAN 3	JAN 8	JAN 13	JAN 18	JAN 23	JAN 28	Uncertainty/ns			Notes
MJD	55559	55564	55569	55574	55579	55584	55589	u_A	u_B	u	
Laboratory *k*				[*UTC-UTC*(*k*)]/ns							
AOS (Borowiec)	-10.2	-10.8	-9.5	-7.3	0.2	5.8	10.7	0.7	6.6	6.7	(*)
APL (Laurel)	1.9	4.5	6.9	6.6	4.7	8.0	4.3	1.5	5.4	5.6	
AUS (Sydney)	310.2	307.8	318.2	337.7	343.2	355.6	379.8	0.5	5.3	5.4	
BEV (Wien)	-14.2	-18.4	-1.6	8.9	18.9	23.7	36.8	1.5	3.6	3.9	
BIM (Sofiya)	-6337.9	-6326.3	-6327.1	-6306.2	-6293.2	-6289.2	-6274.1	2.0	7.2	7.5	
BIRM (Beijing)	-12350.0	-12388.6	-12427.1	-12460.1	-12502.7	-12534.2	-12561.6	2.0	20.1	20.2	
BY (Minsk)	-3.1	-2.3	0.6	6.6	19.1	25.6	22.6	2.0	7.3	7.5	
CAO (Cagliari)	-4914.3	-4915.2	-4932.8	-4953.2	-4974.7	-4997.8	-5016.8	1.5	7.2	7.4	
CH (Bern)	-28.4	-35.7	-31.0	-28.6	-23.0	-19.5	-17.4	0.7	2.2	2.3	
CNM (Queretaro)	-27.9	-29.8	-28.7	-38.1	-43.5	-44.0	-57.7	2.5	5.4	5.9	
CNMP (Panama)	-62.0	-64.5	-57.5	-59.6	-54.7	-41.8	-57.5	3.0	5.4	6.2	
DLR (Oberpfaffenhofen)	9.0	0.4	2.6	4.8	-1.6	-11.7	-7.8	0.5	5.4	5.4	
DMDM (Belgrade)	-4.3	-12.2	-1.9	-3.8	-0.4	-6.3	-6.6	2.0	7.2	7.5	
DTAG (Frankfurt/M)	-276.4	-241.0	-236.7	-230.0	-202.1	-	-	0.5	10.2	10.2	
EIM (Thessaloniki)	-0.7	-10.0	-1.9	-0.1	0.9	-1.3	0.9	3.5	5.4	6.4	
HKO (Hong Kong)	149.7	155.1	162.7	169.9	172.3	179.7	37.1	2.5	5.4	5.9	
IFAG (Wettzell)	-102.0	-110.8	-116.9	-126.6	-131.8	-143.1	-150.3	0.5	5.3	5.3	
IGNA (Buenos Aires)	-	1033.8	1077.0	1123.1	1171.1	1213.0	1277.9	2.5	5.4	5.9	
INPL (Jerusalem)	-97.9	-103.2	-109.1	-111.6	-113.6	-120.4	-120.2	2.5	20.1	20.3	
INTI (Buenos Aires)	-34.1	-34.9	-32.5	1.4	67.3	88.1	90.2	4.0	20.1	20.5	
IPQ (Caparica)	-64.1	-75.1	-91.9	-106.2	-145.0	-177.3	-212.0	1.1	7.2	7.3	
IT (Torino)	0.6	1.8	2.1	2.1	1.6	1.9	2.4	0.8	2.3	2.4	
JATC (Lintong)	-1.5	-4.6	-8.1	-6.3	-9.1	2.1	8.3	1.4	5.1	5.3	
JV (Kjeller)	-41382.6	-41506.5	-41602.6	-41674.8	-41747.2	-41842.9	-41941.1	5.0	20.1	20.7	
KIM (Serpong-Tangerang)	-205.9	-206.4	-188.8	-171.5	-168.1	-158.0	-137.7	3.0	20.1	20.3	
KRIS (Daejeon)	-19.0	-4.6	-6.8	-10.3	-18.7	-16.5	-12.3	0.5	5.3	5.3	
KZ (Astana)	10.0	11.4	11.4	13.8	4.2	4.6	2.5	2.0	20.1	20.2	
LT (Vilnius)	315.5	330.3	315.0	322.0	313.4	319.0	336.1	2.0	5.4	5.7	
LV (Riga)	3692.9	3676.7	3669.6	3661.9	3652.1	3641.0	3629.6	0.9	7.3	7.3	
MIKE (Espoo)	6.0	5.5	5.0	4.9	4.4	4.1	4.1	0.5	7.2	7.3	

Date 2010/11 0h UTC	DEC 29	JAN 3	JAN 8	JAN 13	JAN 18	JAN 23	JAN 28	Uncertainty/ns			Notes
MJD	55559	55564	55569	55574	55579	55584	55589	u_A	u_B	u	
Laboratory k	[UTC-$UTC(k)$]/ns										
MKEH (Budapest)	-44943.4	-45149.0	-45358.0	-45562.8	-45776.3	-45983.5	-46181.2	4.0	20.1	20.5	
MSL (Lower Hutt)	899.1	860.6	710.9	623.5	518.1	431.2	357.8	1.1	20.1	20.1	
NAO (Mizusawa)	-4.6	-8.9	-5.8	-3.3	-9.1	-17.1	-21.9	3.0	19.8	20.1	
NICT (Tokyo)	18.4	16.5	13.0	12.3	12.0	10.5	9.4	0.5	4.9	4.9	
NIM (Beijing)	-13.4	-13.9	-13.1	-11.4	-9.1	-5.2	-2.8	0.8	5.4	5.4	
NIMB (Bucharest)	-285.6	-308.5	-260.0	-273.4	-289.0	-285.4	-290.1	2.0	20.1	20.2	
NIMT (Pathumthani)	417.5	467.3	269.7	276.7	334.2	361.3	399.9	1.1	20.1	20.1	
NIS (Cairo)	21.5	19.7	19.2	22.7	27.5	28.6	-	0.9	7.3	7.3	
NIST (Boulder)	6.7	7.4	8.2	9.0	9.1	8.7	9.1	0.5	6.5	6.5	(*)
NMIJ (Tsukuba)	-7.7	-9.5	-11.5	-13.0	-13.0	-12.2	-11.0	0.5	5.3	5.3	
NMLS (Sepang)	-1664.5	-1706.3	-1736.2	-1772.9	-1808.7	-1766.1	-1698.9	2.0	20.1	20.2	
NPL (Teddington)	-20.3	-18.7	-18.4	-16.5	-13.6	-10.4	-7.0	0.9	5.4	5.4	
NPLI (New-Delhi)	-37.8	-45.2	-44.1	-34.3	-22.5	-18.6	-19.5	2.5	7.3	7.7	
NRC (Ottawa)	10.6	11.0	1.8	1.3	-2.9	-10.4	-10.2	0.5	5.3	5.3	
NRL (Washington DC)	-12.7	-11.3	-8.1	-7.2	-5.1	-3.7	-3.9	0.5	5.3	5.3	
NTSC (Lintong)	13.5	11.4	10.2	8.9	7.7	5.3	2.6	1.4	5.0	5.2	
ONBA (Buenos Aires)	-4156.5	-4180.4	-4192.1	-4208.3	-4239.0	-4262.9	-4273.6	4.0	5.4	6.7	
ONRJ (Rio de Janeiro)	4.1	6.5	-5.6	-6.6	6.3	5.0	-2.2	3.9	19.7	20.1	
OP (Paris)	2.9	5.9	10.8	17.4	23.7	30.2	38.2	0.3	4.5	4.5	(*)
ORB (Bruxelles)	-2.2	-13.9	-12.5	-20.2	-26.8	-31.3	-24.9	0.5	5.4	5.4	
PL (Warszawa)	-1.6	-7.3	-9.9	-11.2	-10.2	-12.3	-3.4	1.5	5.3	5.5	
PTB (Braunschweig)	-1.4	-1.4	-2.0	-1.6	-2.2	-3.0	-2.4	0.4	1.7	1.8	
ROA (San Fernando)	41.7	40.6	39.7	37.3	32.3	27.3	25.4	0.5	6.6	6.6	(*)
SCL (Hong Kong)	66.1	65.2	70.9	67.4	60.3	51.2	44.2	3.0	10.1	10.6	
SG (Singapore)	-13.0	-13.7	-12.3	-11.2	-11.7	-9.0	-5.4	0.5	5.3	5.3	
SIQ (Ljubljana)	-405.4	-386.2	-387.7	-373.9	-364.5	-359.7	-358.1	5.0	20.1	20.7	
SMD (Bruxelles)	-7.0	-7.9	-5.8	-6.0	-0.7	-3.4	2.7	1.5	19.7	19.8	
SMU (Bratislava)	-20.8	-15.6	-13.3	-13.5	-17.0	-8.2	-1.2	1.5	20.1	20.1	
SP (Boras)	7.9	6.0	6.4	5.4	3.9	1.6	1.5	0.5	4.5	4.5	(*)
SU (Moskva)	-6.7	-6.3	-7.0	-7.1	-6.4	-5.1	-3.4	1.2	6.6	6.7	(#)
TCC (Concepcion)	1018.3	1033.2	1028.6	1043.1	1059.7	1078.2	1082.6	0.5	19.9	19.9	
TL (Chung-Li)	-20.6	-19.2	-19.5	-17.6	-10.3	-5.9	-4.5	0.5	5.2	5.2	
TP (Praha)	2.8	0.4	-3.5	-0.3	1.2	-3.0	1.8	0.5	5.3	5.3	
UA (Kharkov)	-	-102.9	-93.6	-93.6	-85.8	-85.7	-87.2	1.5	20.1	20.2	
UME (Gebze-Kocaeli)	-721.6	-710.5	-699.9	-698.1	-701.0	-704.8	-695.1	1.3	8.2	8.4	(#)
USNO (Washington DC)	-5.0	-4.7	-4.6	-4.2	-2.4	-0.7	0.9	0.4	3.9	3.9	
VMI (Ha Noi)	-9.4	-5.9	-1.7	4.2	0.2	-2.4	-6.3	1.1	20.1	20.1	
VSL (Delft)	8.4	4.8	-6.3	-9.1	-11.6	-8.3	-5.0	0.9	2.2	2.4	
ZA (Pretoria)	-3303.7	-3400.3	-3457.3	-3524.8	-3599.1	-3687.7	-3748.6	1.5	19.9	20.0	

- Notes on section 1:

(*) Linked by combination of TWSTFT and GPS.
(#) Linked by combination of GPS and GLONASS.

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

Date 2010/11 0h UTC	DEC 29	JAN 3	JAN 8	JAN 13	JAN 18	JAN 23	JAN 28	
MJD	55559	55564	55569	55574	55579	55584	55589	
Laboratory *k*				[*TAI*-*TA*(*k*)]/ns				
CH (Bern)	43838.2	43775.5	43711.6	43649.7	43589.1	43527.5	43464.1	
F (Paris)	167824.7	167824.2	167819.5	167816.3	167813.8	167815.7	167812.0	
IT (Torino)	98903.2	99040.5	99176.0	99313.6	99449.9	99583.8	99722.2	
JATC (Lintong)	-49004.3	-49029.3	-49056.8	-49084.1	-49111.8	-49137.6	-49163.8	
KRIS (Daejeon)	34959.7	35039.4	35102.7	35161.9	35215.5	35285.7	35359.2	
NICT (Tokyo)	-144.8	-147.3	-147.4	-146.4	-147.4	-148.3	-148.8	
NIST (Boulder)	-45357385.6	-45357578.9	-45357772.1	-45357964.9	-45358157.8	-45358351.2	-45358543.8	
NRC (Ottawa)	27339.9	27315.0	27280.3	27254.5	27224.9	27192.0	27166.8	
NTSC (Lintong)	11509.6	11535.6	11557.2	11580.1	11604.0	11630.1	11654.7	
ONRJ (Rio de Janeiro	-8646.4	-8672.2	-8699.4	-8723.2	-8748.9	-8779.7	-8808.0	
PL (Warszawa)	-8108.6	-8128.7	-8154.6	-8175.8	-8196.7	-8222.9	-8244.0	
PTB (Braunschweig)	-329260.5	-329261.7	-329253.0	-329241.5	-329230.7	-329221.5	-329210.9	
SG (Singapore)	7181.0	7192.3	7205.7	7218.8	7229.3	7243.0	7257.6	
SU (Moskva)	27269003.5	27269153.8	27269304.3	27269454.5	27269605.6	27269757.2	27269908.8	(1)
TL (Chung-Li)	-541.0	-538.8	-538.3	-537.6	-539.0	-537.5	-536.1	
USNO (Washington DC)	-35078181.8	-35078477.4	-35078773.7	-35079069.8	-35079365.3	-35079661.3	-35079956.9	

- 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	55559 - 55589	6.598×10^{-13}	(2010 DEC 29 - 2011 JAN 28)
New correction	55589 - 55619	6.591×10^{-13}	(2011 JAN 28 - 2011 FEB 27)
New correction foreseen	55619 - 55649	6.584×10^{-13}	(2011 FEB 27 - 2011 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, $u_{1/Lab}$ is the uncertainty in the link between the PFS and the clock participating to TAI, including the uncertainty due to the dead-time, $u_{1/TAI}$ 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	$u_{1/Lab}$	$u_{1/TAI}$	u	Ref(u_B)	u_B(Ref)	Note
PTB-CS1	55559 55589	-2.21	6.00	8.00	0.00	0.13	10.00	T148	8.	(1)
IT-CsF1	55564 55589	9.91	0.30	0.70	0.30	0.54	0.98	T233	0.80	(2)
NICT-CsF1	55554 55574	3.79	1.00	1.00	0.30	0.28	1.47	T236	1.9	(3)
NIST-F1	55574 55589	5.20	0.46	0.31	0.25	0.37	0.71	T214	0.35	(4)
NMIJ-F1	55559 55589	6.34	0.70	3.90	0.30	0.20	3.98	T213	3.9	(5)
NPL-CsF2	55554 55569	8.10	0.29	0.40	0.10	0.97	1.10	T271	0.41	(6)
PTB-CSF1	55569 55589	6.48	0.32	0.76	0.03	0.19	0.85	T162	1.40	(7)
PTB-CSF1	55539 55564	7.03	0.23	0.76	0.02	0.15	0.81	T162	1.40	(8)

Notes:
(1) Continuously operating as a clock participating to TAI
(2) Report 10 FEB. 2011 by INRIM
(3) Report 04 FEB. 2011 by NICT
(4) Report 03 FEB. 2011 by NIST
(5) Report 03 FEB. 2011 by NMIJ
(6) Report 13 JAN. 2011 by NPL
(7) Report 02 FEB. 2011 by PTB
(8) Report 05 JAN. 2011 by PTB

The second table gives the BIPM estimate of d, based on all available PFS measurements over the period MJD 55199-55589, 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	
55559-55589	6.6×10^{-15}	0.4×10^{-15}	(2010 DEC 29 - 2011 JAN 28)

5 - Relations of UTC and TAI with predictions of UTC(k) disseminated by GNSS and their System Times.

[*UTC-GPS time*] = -15 s + C_0 , [*TAI-GPS time*] = 19 s + C_0 , global uncertainty is of the order of 10 ns.
[*UTC-UTC(USNO)_GPS*] = C_0', [*TAI-UTC(USNO)_GPS*] = 34 s + C_0', global uncertainty is of the order of 10 ns.
[*UTC-GLONASS time*] = C_1 , [*TAI-GLONASS time*] = 34 s + C_1 , global uncertainty is of the order of hundreds ns.
[*UTC-UTC(SU)_GLONASS*]= C_1', [*TAI-UTC(SU)_GLONASS*]= 34 s + C_1', global uncertainty is of the order of hundreds ns.

[*UTC(USNO)_GPS*] and [*UTC(SU)_GLONASS*] are, respectively, UTC(USNO) and UTC(SU) as predicted by USNO and SU and disseminated by GPS and GLONASS. The C_0 and C_0' values provide realizations of GPS time and of the prediction of UTC(USNO) broadcast by GPS, 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 and C_1' values provide realizations of GLONASS time and of the prediction of UTC(SU) broadcast by GLONASS, as obtained using the values [*UTC-UTC(AOS)*] and the GLONASS data taken at the Astrogeodynamical Observatory Borowiec (AOS). N_0, N_0', N_1 and N_1' are the numbers of measurements; when N_0, N_0', N_1 or N_1' is 0, the corresponding values in the table are interpolated.
The standard deviations σ_0, σ_0', σ_1 and σ_1' characterize the dispersion of individual measurements.
The actual uncertainty of users' access to GPS and GLONASS times may differ from these values.
For this edition of circular, σ_0= 1.3 ns, σ_0'= 1.4 ns, σ_1= 6.8 ns, σ_1'= 6.9 ns

2010/11 0h UTC	MJD	C_0/ns	N_0	C_0'/ns	N_0'	C_1/ns	N_1	C_1'/ns	N_1'
DEC 29	55559	-9.3	88	-8.2	88	-188.9	80	-351.9	79
DEC 30	55560	-10.5	90	-9.2	90	-188.9	86	-355.8	86
DEC 31	55561	-8.6	89	-8.3	89	-187.7	89	-358.0	89
JAN 1	55562	-8.4	89	-10.0	89	-187.7	85	-361.2	85
JAN 2	55563	-7.8	89	-9.1	89	-189.7	84	-366.4	84
JAN 3	55564	-8.7	90	-9.1	90	-191.3	81	-370.6	81
JAN 4	55565	-6.8	89	-6.2	89	-190.6	80	-371.6	80
JAN 5	55566	-3.9	89	-2.4	89	-188.2	82	-370.9	82
JAN 6	55567	-3.7	87	-2.4	87	-185.6	76	-370.4	76
JAN 7	55568	-6.3	89	-6.1	89	-185.6	87	-372.8	88
JAN 8	55569	-6.8	89	-7.2	89	-183.6	89	-372.8	89
JAN 9	55570	-6.3	89	-6.3	89	-182.2	81	-373.2	80
JAN 10	55571	-5.9	90	-6.2	90	-182.2	88	-374.5	88
JAN 11	55572	-6.5	89	-9.5	89	-181.0	87	-373.7	88
JAN 12	55573	-5.9	89	-9.7	89	-180.4	88	-372.0	88
JAN 13	55574	-6.4	89	-7.3	89	-180.4	85	-370.4	85
JAN 14	55575	-6.6	90	-6.1	90	-178.4	85	-368.1	85

2010/11 0h UTC	MJD	C_0/ns	N_0	C_0'/ns	N_0'	C_1/ns	N_1	C_1'/ns	N_1'
JAN 15	55576	-5.2	89	-4.7	89	-173.8	85	-363.2	85
JAN 16	55577	-8.1	89	-8.0	88	-169.3	88	-357.7	88
JAN 17	55578	-9.6	89	-7.3	89	-168.1	83	-355.0	84
JAN 18	55579	-9.9	90	-6.2	90	-167.3	83	-352.7	85
JAN 19	55580	-11.5	89	-7.6	89	-167.5	86	-352.3	86
JAN 20	55581	-6.9	84	-2.6	85	-165.8	82	-349.8	13
JAN 21	55582	-4.0	89	0.6	89	-163.4	88	-343.0	87
JAN 22	55583	-1.5	90	2.3	90	-160.8	85	-336.8	85
JAN 23	55584	-4.2	89	-2.8	88	-158.0	84	-330.7	84
JAN 24	55585	-3.0	89	-2.0	89	-159.0	88	-328.2	88
JAN 25	55586	-1.9	86	-1.0	86	-162.2	83	-327.6	83
JAN 26	55587	0.2	90	0.0	90	-162.7	81	-325.3	80
JAN 27	55588	-1.1	88	-2.1	89	-159.3	80	-320.8	80
JAN 28	55589	-2.5	89	-3.4	89	-157.8	83	-318.3	83

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; GPSGLN for the combination of GPS MC and GLN MC links; TWGPPP/TWGPP3 for the combined smoothing of TWSTFT and GPS PPP/GPS P3; INT LK for internal cable lin 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 of 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	TWGPP3	0.6	5.0	BC(GPS MC)	2008 May	(*)
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	GPS MC	2.5	5.0	GPS EC/GPS EC	2004 Aug/2006 Sep	
INPL/PTB	GPS P3	2.5	20.0	NA /GPS EC	NA /2004 Aug	
INTI/PTB	GPS MC	4.0	20.0	NA /GPS EC	NA /2006 Sep	
IPQ /PTB	TWSTFT	1.0	7.0	LC(GPS MC)	2010 Aug	
IT /PTB	TWSTFT	0.7	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 P3	0.8	7.0	LC(GPS MC)	2010 Jun	
MIKE/PTB	GPSPPP	0.3	7.0	NA /GPS EC	NA /2004 Aug	
MKEH/PTB	GPS SC	4.0	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	0.7	5.0	GPS EC/GPS EC	2009 Dec/2004 Aug	
NIMB/PTB	GPS MC	2.0	20.0	NA /GPS EC	NA /2006 Sep	
NIMT/PTB	GPS P3	1.0	20.0	NA /GPS EC	NA /2004 Aug	
NIS /PTB	GPS P3	0.8	7.0	LC(GPS MC)	2010 Jun	
NIST/PTB	TWGPPP	0.3	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	

Link	Type	u_A/ns	u_B/ns	Calibration Type	Calibration Dates	
NMLS/PTB	GPS MC	2.0	20.0	NA /GPS EC	NA /2006 Sep	
NPL /PTB	TWSTFT	0.8	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	GPS MC	1.5	5.0	GPS EC/GPS EC	2004 Sep/2006 Sep	
ONBA/PTB	GPS MC	4.0	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	TWGPPP	0.3	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	TWGPPP	0.3	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	GPS EC/GPS EC	2010 Mar/2004 Aug	
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	TWGPPP	0.3	1.0	LC(TWSTFT)/BC(GPS PPP)	2006 Mar/2009 Aug	(*)
SU /PTB	GPSGLN	1.2	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	1.5	20.0	NA /GPS EC	NA /2006 Sep	
UME /PTB	GPSGLN	1.3	7.0	GPS EC/GPS EC	2005 Dec/2006 Sep	(#)
USNO/PTB	GPSPPP	0.3	5.0	GPS EC/GPS EC	2001 /2004 Aug	
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	GPS P3	1.5	20.0	NA /GPS EC	NA /2004 Aug	

- Notes on section 6:
(*) Linked by combination of TWSTFT and GPS.
(#) Linked by combination of GPS and GLONASS.