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2012 OCTOBER 10, 10h UTC
BUREAU INTERNATIONAL DES POIDS ET MESURES
ORGANISATION INTERGOUVERNEMENTALE DE LA CONVENTION DU METRE
PAVILLON DE BRETEUIL F-92312 SEVRES CEDEX TEL. +33 1 45 07 70 70 FAX. +33 1 45 34 20 21 tai@bipm.org

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 2012 July 1, 0h UTC, *TAI-UTC* = 35 s.

Date 2012 0h UTC	AUG 30	SEP 4	SEP 9	SEP 14	SEP 19	SEP 24	SEP 29	Uncertainty/ns			Notes
MJD	56169	56174	56179	56184	56189	56194	56199	u_A	u_B	u	
Laboratory *k*				[*UTC-UTC*(*k*)]/ns							
AOS (Borowiec)	0.7	2.1	4.7	4.6	5.2	4.1	3.9	0.3	5.2	5.2	
APL (Laurel)	-3.8	-6.1	-7.3	-8.4	-2.5	-3.3	-4.1	0.3	5.2	5.2	
AUS (Sydney)	465.6	480.8	480.6	473.4	467.4	470.7	458.6	0.3	5.2	5.2	
BEV (Wien)	51.1	56.8	56.6	60.0	60.6	46.8	37.2	0.3	3.4	3.4	
BIM (Sofiya)	1645.2	1664.0	1657.8	1661.0	1656.9	1676.0	1695.1	1.5	7.2	7.3	
BIRM (Beijing)	-497.0	-436.8	-385.6	-321.9	-265.6	-208.9	-148.2	1.5	20.1	20.1	
BY (Minsk)	34.1	35.2	36.8	35.0	37.7	41.5	44.7	1.5	7.2	7.3	
CAO (Cagliari)	-	-	-	-	-	-	-				
CH (Bern)	23.4	19.4	17.7	12.2	6.7	0.6	-2.2	0.3	1.8	1.9	
CNM (Queretaro)	-12.2	-10.2	-7.4	-4.2	-12.3	-12.5	-8.6	2.0	5.2	5.6	
CNMP (Panama)	-15.6	-14.7	-11.3	-7.9	-1.7	2.0	11.6	3.5	5.2	6.2	
DLR (Oberpfaffenhofen)	45.9	37.3	27.3	5.1	-6.6	-11.5	-15.4	0.3	5.2	5.2	
DMDM (Belgrade)	14.1	9.4	13.6	15.9	20.3	27.3	25.1	0.3	7.1	7.1	
DTAG (Frankfurt/M)	197.8	204.6	207.0	207.8	222.5	228.2	236.3	0.3	10.1	10.1	
EIM (Thessaloniki)	-	-	-	-	-	-	-				
HKO (Hong Kong)	437.6	443.2	457.7	460.4	468.2	485.2	500.2	2.5	5.2	5.8	
IFAG (Wettzell)	-619.0	-612.0	-607.6	-607.0	-604.2	-612.0	-603.6	0.3	5.2	5.2	
IGNA (Buenos Aires)	8940.0	9016.7	9074.8	9145.9	9212.9	9274.4	9338.0	2.0	5.2	5.6	
INPL (Jerusalem)	63.0	54.3	46.0	39.7	34.0	31.3	31.9	1.0	20.1	20.1	
INTI (Buenos Aires)	-52.7	-20.7	21.3	48.5	62.0	64.3	69.2	4.0	20.1	20.5	
INXE (Rio de Janeiro)	-	-	-	16.8	12.4	6.4	-5.2	1.0	20.1	20.1	(1)
IPQ (Caparica)	-2.9	5.5	-5.0	-0.9	1.3	-6.1	-3.9	0.4	7.2	7.2	
IT (Torino)	17.5	19.8	20.3	19.4	18.2	15.7	13.8	0.3	2.0	2.0	
JATC (Lintong)	-6.9	8.2	14.2	13.4	0.9	4.9	-0.8	0.5	5.1	5.1	
JV (Kjeller)	158.9	187.0	189.9	191.9	288.9	214.4	212.5	5.0	20.0	20.6	
KEBS (Nairobi)	13048.7	13157.2	13254.7	13349.2	13455.2	13549.2	13647.8	1.5	20.1	20.1	
KIM (Serpong-Tangerang)	94.3	127.3	133.9	141.3	128.1	146.1	148.3	2.0	20.0	20.1	
KRIS (Daejeon)	2.8	3.3	4.7	5.5	7.1	7.0	7.6	0.3	5.1	5.1	
KZ (Astana)	-175.7	-160.6	-156.5	-169.3	-203.2	-193.9	-191.0	2.5	20.0	20.2	
LT (Vilnius)	117.5	125.7	144.8	157.9	179.6	188.0	194.0	2.0	5.2	5.6	

Date 2012 0h UTC	AUG 30	SEP 4	SEP 9	SEP 14	SEP 19	SEP 24	SEP 29	Uncertainty/ns			Notes
MJD	56169	56174	56179	56184	56189	56194	56199	u_A	u_B	u	
Laboratory *k*				[*UTC*-*UTC*(*k*)]/ns							
MIKE (Espoo)	4.7	5.5	6.8	7.0	7.7	6.6	6.5	0.3	7.2	7.2	
MKEH (Budapest)	-70265.8	-70473.6	-70676.0	-70906.0	-71114.2	-71326.0	-71547.1	1.5	20.0	20.1	
MSL (Lower Hutt)	-258.7	-265.9	-275.0	-290.0	-320.0	-331.2	-312.9	1.5	20.1	20.1	
NAO (Mizusawa)	162.3	163.8	165.5	169.9	176.9	172.6	168.6	2.0	19.8	19.9	
NICT (Tokyo)	11.3	10.9	11.3	13.2	16.1	16.6	18.1	0.3	4.6	4.6	
NIM (Beijing)	5.7	5.6	4.9	5.0	6.3	5.9	7.2	0.7	5.2	5.2	
NIMB (Bucharest)	23.1	36.0	70.3	85.8	102.3	108.2	106.5	2.0	20.1	20.2	
NIMT (Pathumthani)	-14.2	-14.5	-3.8	4.3	7.5	14.3	25.2	1.0	20.0	20.0	
NIS (Cairo)	-982.1	-988.4	-992.7	-995.9	-997.8	-999.1	-1003.9	0.8	7.1	7.2	
NIST (Boulder)	2.8	2.8	3.3	2.9	3.9	3.0	2.9	0.3	5.1	5.1	
NMIJ (Tsukuba)	2.5	5.3	9.7	10.6	10.3	9.0	8.3	0.4	5.2	5.2	
NMLS (Sepang)	-843.7	-824.5	-795.6	-771.6	-740.6	-723.1	-707.0	1.5	20.1	20.1	
NPL (Teddington)	6.5	3.9	2.1	-0.1	-1.2	-3.3	-4.5	0.3	5.2	5.2	
NPLI (New-Delhi)	190.7	189.4	190.2	190.0	190.1	189.2	189.0	0.3	7.2	7.2	
NRC (Ottawa)	16.0	11.2	15.9	9.5	9.3	8.2	2.6	0.3	5.2	5.2	
NRL (Washington DC)	-2.0	46.0	173.7	244.6	264.3	249.3	214.4	0.3	5.2	5.2	
NTSC (Lintong)	8.6	6.4	7.7	7.7	1.3	4.6	7.8	0.5	5.0	5.0	
ONBA (Buenos Aires)	-	-125.1	-146.6	-152.2	-175.6	-195.1	-205.6	2.5	5.2	5.8	
ONRJ (Rio de Janeiro)	2.1	8.1	9.4	1.9	3.1	13.6	3.7	3.9	7.1	8.1	
OP (Paris)	18.8	16.8	27.9	27.2	29.2	31.1	35.0	0.3	1.9	1.9	
ORB (Bruxelles)	16.0	16.1	15.1	12.2	6.5	1.9	0.0	0.3	5.2	5.2	
PL (Warszawa)	68.7	73.5	68.7	62.3	54.5	44.5	38.1	0.3	5.1	5.1	
PTB (Braunschweig)	1.9	1.6	2.5	2.3	2.5	1.4	1.6	0.1	1.6	1.6	
ROA (San Fernando)	1.1	4.2	6.3	6.6	6.9	5.8	5.6	0.3	5.1	5.2	
SCL (Hong Kong)	-47.6	-45.0	-38.4	-41.3	-37.3	-46.1	-42.3	3.0	10.1	10.6	
SG (Singapore)	1.1	12.4	27.9	33.9	42.1	51.3	50.3	0.4	5.2	5.3	
SIQ (Ljubljana)	-595.5	-595.7	-579.0	-611.5	-574.4	-594.1	-603.4	4.0	20.0	20.4	
SMD (Bruxelles)	28.0	-3.0	21.9	-0.5	1.1	-3.0	3.5	1.5	20.1	20.1	(2)
SMU (Bratislava)	-44.8	-45.6	-63.5	-68.1	-69.4	-76.9	-76.3	2.5	20.0	20.2	
SP (Boras)	-3.9	-3.5	-2.6	-3.4	-2.3	-2.3	-0.6	0.3	1.8	1.9	
SU (Moskva)	3.2	3.5	2.8	2.5	2.1	1.7	1.5	1.0	5.2	5.3	
TCC (Concepcion)	1425.0	1427.3	1441.9	1464.9	1485.5	1508.3	1528.1	0.3	5.2	5.2	
TL (Chung-Li)	10.4	9.5	9.8	9.4	9.3	7.0	4.2	0.3	5.0	5.0	
TP (Praha)	-2.0	-4.5	-4.8	-8.2	-15.9	-19.8	-22.7	0.3	5.2	5.2	
UA (Kharkov)	1.9	15.5	19.8	24.5	27.3	34.8	42.9	1.5	7.1	7.3	
UME (Gebze-Kocaeli)	280.7	276.6	276.6	287.3	291.1	297.6	315.3	1.0	7.0	7.1	
USNO (Washington DC)	7.5	7.3	7.3	6.8	7.2	5.8	5.7	0.2	3.8	3.8	
VMI (Ha Noi)	0.9	8.8	18.5	19.8	13.0	-3.9	-15.3	1.0	20.1	20.1	
VSL (Delft)	6.3	12.0	18.5	15.6	12.9	11.8	5.8	0.3	1.8	1.9	
ZA (Pretoria)	747.1	714.5	676.3	626.1	586.4	556.5	516.5	1.5	19.9	19.9	

- Notes on section 1:

(1) INXE : INMETRO - National Institute for Metrology and Technology - Time and Frequency Laboratory, Rio de Janeiro, Brazil.
(2) SMD : Apparent time step of UC(SMD) of +25ns on MJD 56180.03.

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

Date 2012 0h UTC	AUG 30	SEP 4	SEP 9	SEP 14	SEP 19	SEP 24	SEP 29	
MJD	56169	56174	56179	56184	56189	56194	56199	
Laboratory *k*				[*TAI*-*TA*(*k*)]/ns				
CH (Bern)	35662.3	35588.4	35516.1	35439.6	35364.3	35288.1	35213.2	
F (Paris)	167604.2	167604.3	167605.9	167602.9	167604.9	167602.8	167604.0	
JATC (Lintong)	-52047.4	-52061.8	-52090.8	-52118.3	-52150.0	-52169.7	-52196.8	
KRIS (Daejeon)	41806.0	41851.8	41898.7	41944.9	41991.3	42035.7	42080.3	
NICT (Tokyo)	366.5	374.1	384.2	395.3	406.4	415.9	428.8	
NIST (Boulder)	-45380623.2	-45380811.7	-45380999.7	-45381188.6	-45381376.1	-45381565.5	-45381754.1	
NRC (Ottawa)	24678.4	24655.3	24643.0	24619.8	24602.7	24584.7	24562.5	
NTSC (Lintong)	14840.5	14871.1	14899.6	14930.5	14955.8	14995.1	15027.5	
ONRJ (Rio de Janeiro)	-11641.8	-11667.3	-11693.2	-11720.3	-11749.3	-11776.6	-11810.2	
PL (Warszawa)	-10554.2	-10566.1	-10577.9	-10591.3	-10605.3	-10619.3	-10634.8	
PTB (Braunschweig)	2019.0	2018.9	2019.1	2018.1	2018.7	2017.4	2017.8	
SG (Singapore)	10286.5	10332.9	10382.3	10423.3	10466.4	10515.2	10553.3	
SU (Moskva)	27287363.1	27287515.0	27287666.1	27287817.9	27287969.6	27288121.2	27288273.3	(1)
TL (Chung-Li)	-482.5	-480.1	-473.4	-469.1	-463.3	-459.6	-453.5	
USNO (Washington DC)	-35113875.3	-35114163.6	-35114452.0	-35114740.6	-35115027.6	-35115316.1	-35115603.8	

- 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	56169 - 56199	6.486×10^{-13}	(2012 AUG 30 - 2012 SEP 29)
New correction	56199 - 56229	6.483×10^{-13}	(2012 SEP 29 - 2012 OCT 29)
New correction foreseen	56229 - 56259	6.483×10^{-13}	(2012 OCT 29 - 2012 NOV 28)

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	56169	56199	-10.67	6.00	8.00	0.00	0.07	10.00	T148	8.	(1)
PTB-CS2	56169	56199	-2.61	3.00	12.00	0.00	0.07	12.37	T148	12.	(1)
NIST-F1	56134	56159	0.81	0.29	0.31	0.14	0.23	0.50	T214	0.35	(2)
SYRTE-FO1	56169	56199	0.18	0.40	0.43	0.10	0.20	0.63	T227	0.72	(3)
SYRTE-FO2	56174	56199	0.00	0.40	0.26	0.10	0.23	0.54	T227	0.65	(3)
PTB-CSF1	56169	56199	0.99	0.22	0.74	0.01	0.07	0.77	T162	1.40	(4)

Notes:

(1) Continuously operating as a clock participating to TAI
(2) Report 29 AUG. 2012 by NIST
(3) Report 03 OCT. 2012 by LNE-SYRTE
(4) Report 02 OCT. 2012 by PTB

In the third table, *d* is obtained on the given periods of estimation by comparison of the TAI frequency with that of the given individual Secondary Frequency Standards (SFS). This table is organized similarly to the first table, with the addition of u_{Srep} which represents the recommended uncertainty of the secondary representation of the second and of Ref(u_S) which provides the reference for the frequency of the transition and its uncertainty u_{Srep}. All values are expressed in 10^{-15} and are valid only for the stated period of estimation. Note that SFS are not used for the estimation of d provided in the second table above, nor for determining the steering correction reported in section 3.

Standard	Period of Estimation		d	u_A	u_B	$u_{l/Lab}$	$u_{l/Tai}$	u	u_{Srep}	Ref(u_S)	Ref(u_B)	u_B(Ref)	Note
SYRTE-FORb	56169	56199	-1.49	0.30	0.32	0.10	0.20	0.49	3.00	[1]	T295	0.45	(1)

[1] CIPM Recommendation 1 (CI-2006) “Concerning secondary representations of the second”
in *Procès-Verbaux des Séances du Comité International des Poids et Mesures*, 96th meeting (2006), 2007, 258 p.

-Note :

(1) Report 04 SEP. 2012 by LNE-SYRTE

The second table gives the BIPM estimate of d, based on all available PFS measurements over the period MJD 55809-56199, 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	
56169-56199	0.2×10^{-15}	0.3×10^{-15}	(2012 AUG 30 - 2012 SEP 29)

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

[*UTC-GPS time*] = -16 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*] = 35 s + C_0', global uncertainty is of the order of 10 ns.
[*UTC-GLONASS time*] = C_1 , [*TAI-GLONASS time*] = 35 s + C_1 , global uncertainty is of the order of hundreds ns.
[*UTC-UTC(SU)_GLONASS*]= C_1', [*TAI-UTC(SU)_GLONASS*]= 35 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= 1.1 ns, σ_0'= 1.1 ns, σ_1= 6.4 ns, σ_1'= 6.3 ns

2012 0h UTC	MJD	C_0/ns	N_0	C_0'/ns	N_0'	C_1/ns	N_1	C_1'/ns	N_1'
AUG 30	56169	6.5	89	8.1	89	-205.0	86	-435.7	86
AUG 31	56170	8.3	90	8.5	89	-200.4	90	-431.6	90
SEP 1	56171	9.8	88	8.2	88	-195.7	79	-426.8	81
SEP 2	56172	11.2	88	8.7	88	-195.9	86	-426.1	87
SEP 3	56173	10.3	87	6.7	77	-196.5	89	-425.3	89
SEP 4	56174	10.6	87	5.5	88	-192.5	81	-419.8	80
SEP 5	56175	12.9	88	8.2	89	-190.2	87	-416.0	87
SEP 6	56176	14.9	89	10.3	89	-190.2	89	-414.1	89
SEP 7	56177	10.8	89	7.6	89	-189.1	82	-410.7	81
SEP 8	56178	7.3	90	6.5	90	-188.0	89	-406.9	89
SEP 9	56179	6.4	88	7.6	88	-186.9	84	-402.0	84
SEP 10	56180	5.5	89	7.8	89	-181.9	88	-393.1	88
SEP 11	56181	4.5	89	8.0	89	-175.5	89	-383.7	89
SEP 12	56182	3.6	90	7.1	89	-170.5	90	-376.1	90
SEP 13	56183	3.5	89	5.3	89	-164.5	89	-367.8	89
SEP 14	56184	5.0	89	7.8	89	-160.8	88	-360.7	89
SEP 15	56185	5.3	88	6.4	88	-161.9	89	-358.0	88
SEP 16	56186	6.3	90	5.1	89	-163.2	90	-356.2	90
SEP 17	56187	7.8	89	8.4	89	-162.8	88	-353.3	88
SEP 18	56188	5.7	89	6.0	89	-161.4	81	-349.9	82
SEP 19	56189	7.7	89	6.0	89	-160.0	89	-347.2	89
SEP 20	56190	10.3	90	7.8	90	-162.1	90	-348.1	90
SEP 21	56191	9.7	87	8.4	89	-162.7	89	-347.5	89
SEP 22	56192	8.7	89	10.0	88	-159.6	89	-343.5	89
SEP 23	56193	7.5	86	6.9	86	-158.4	89	-341.2	89
SEP 24	56194	6.9	90	6.2	90	-155.8	90	-337.5	90
SEP 25	56195	8.1	89	8.1	89	-152.1	88	-333.6	86
SEP 26	56196	7.5	89	8.2	89	-149.9	84	-332.2	84
SEP 27	56197	4.4	89	5.2	89	-150.1	89	-332.5	89
SEP 28	56198	3.2	90	4.7	90	-150.3	90	-332.5	90
SEP 29	56199	3.0	89	4.0	89	-148.7	89	-330.7	89

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 link and TWSTFT for two-way satellite time and frequency transfer data.

For each link, the following uncertainties are provided: u_A is the standard uncertainty accounting for measurement noise and random effects with typical duration between 1 day 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	TWGPPP	0.3	5.0	BC(GPS MC)	2008 May
APL /PTB	GPSPPP	0.3	5.0	LC(GPS MC)	2012 Sep
AUS /PTB	GPSPPP	0.3	5.0	GPS EC/GPS EC	2010 Oct/2004 Aug
BEV /PTB	GPSPPP	0.3	3.0	BC(GPS MC)	2012 Mar
BIM /PTB	GPS MC	1.5	7.0	GPS EC/GPS EC	2007 Nov
BIRM/PTB	GPS MC	1.5	20.0	NA /GPS EC	NA /2006 Sep
BY /PTB	GPS MC	1.5	7.0	GPS EC/GPS EC	2008 Jun/2006 Sep
CAO /PTB	NA				
CH /PTB	TWGPPP	0.3	1.0	LC(TWSTFT)/BC(GPS PPP)	2008 Sep/2009 Aug
CNM /PTB	GPSGLN	2.0	5.0	LC(GPS MC)	2012 Mar
CNMP/PTB	GPS MC	3.5	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	GPSPPP	0.3	7.0	LC(GPS MC)	2012 Jul
DTAG/PTB	GPSPPP	0.3	10.0	LC(GPS MC)	2009 Jul
EIM /PTB	NA				
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	2.0	5.0	GPS EC/GPS EC	2004 Aug/2006 Sep
INPL/PTB	GPSGLN	1.0	20.0	NA /GPS EC	NA /2004 Aug
INTI/PTB	GPS MC	4.0	20.0	NA /GPS EC	NA /2006 Sep
INXE/PTB	GPS P3	1.0	20.0	NA /GPS EC	NA /2006 Sep
IPQ /PTB	TWGPPP	0.4	7.0	LC(GPS MC)	2010 Aug
IT /PTB	TWGPPP	0.3	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
KEBS/PTB	GPS MC	1.5	20.0	NA /GPS EC	NA /2006 Sep
KIM /PTB	GPS MC	2.0	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	GPSGLN	2.5	20.0	NA /GPS EC	NA /2006 Sep
LT /PTB	GPS MC	2.0	5.0	GPS EC/GPS EC	2006 Oct/2006 Sep

Link	Type	u_A/ns	u_B/ns	Calibration Type	Calibration Dates
MIKE/PTB	GPSPPP	0.3	7.0	NA /GPS EC	NA /2004 Aug
MKEH/PTB	GPS MC	1.5	20.0	NA /GPS EC	NA /2006 Sep
MSL /PTB	GPS P3	1.5	20.0	NA /GPS EC	NA /2004 Aug
NAO /PTB	GPS MC	2.0	20.0	NA /GPS EC	NA /2006 Sep
NICT/PTB	TWGPPP	0.3	5.0	LC(GPS P3)	2009 Jun
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	0.4	5.0	GPS EC/GPS EC	2002 Apr/2004 Aug
NMLS/PTB	GPS MC	1.5	20.0	NA /GPS EC	NA /2006 Sep
NPL /PTB	TWGPPP	0.3	5.0	LC(GPS P3)	2008 Sep/2009 Nov
NPLI/PTB	TWGPPP	0.3	7.0	LC(GPS P3)	2012 Jun
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	7.0	GPS EC/GPS EC	2011 Dec/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	GPSPPP	0.3	5.0	LC(GPS MC)	2012 Mar
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	0.4	5.0	GPS EC/GPS EC	2010 Mar/2004 Aug
SIQ /PTB	GPS SC	4.0	20.0	NA /GPS EC	NA /2003 Aug
SMD /PTB	GPS MC	1.5	20.0	NA /GPS EC	NA /2006 Sep
SMU /PTB	GPSGLN	2.5	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	1.0	5.0	LC(GPS MC)	2009 May
TCC /PTB	GPSPPP	0.3	5.0	GPS EC/GPS EC	2011 Feb/2004 Aug
TL /PTB	TWGPPP	0.3	5.0	LC(GPS PPP)	2011 Dec
TP /PTB	GPSPPP	0.3	5.0	GPS EC/GPS EC	2009 Feb/2004 Aug
UA /PTB	GPS MC	1.5	7.0	GPS EC/GPS EC	2011 Mar/2006 Sep
UME /PTB	GPSGLN	1.0	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	TWGPPP	0.3	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