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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*)].
From 1999 January 1, 0h UTC, *TAI-UTC* = 32 s. From 2006 January 1, 0h UTC, *TAI-UTC* = 33 s.

Date 2005 0h UTC	JUN 28	JUL 3	JUL 8	JUL 13	JUL 18	JUL 23	JUL 28	Uncertainty/ns			Notes
MJD	53549	53554	53559	53564	53569	53574	53579				
Laboratory *k*				[*UTC-UTC*(*k*)]/ns				u_A	u_B	u	(1)
AOS (Borowiec)	15.2	13.8	6.1	2.2	-0.7	7.4	0.7	1.6	5.2	5.4	
APL (Laurel)	-7.2	-4.7	12.4	23.4	33.4	21.3	10.3	1.6	5.2	5.4	
AUS (Sydney)	-631.3	-636.2	-637.7	-642.6	-646.9	-643.2	-638.1	3.2	6.4	7.2	
BEV (Wien)	-7.4	-13.8	-20.1	-24.9	-34.6	-57.5	-65.6	1.6	5.2	5.4	
BIRM (Beijing)	-549.5	-570.3	-592.1	-613.6	-630.8	-666.0	-681.0	2.8	20.4	20.6	
CAO (Cagliari)	-2547.6	-2522.5	-2484.9	-2478.2	-2484.9	-2468.6	-2451.5	1.6	7.2	7.4	
CH (Bern)	22.0	19.2	24.4	22.0	18.2	7.6	0.5	0.8	5.2	5.3	
CNM (Queretaro)	58.6	58.7	58.5	60.7	63.1	65.3	60.7	5.0	20.3	20.9	
CNMP (Panama)	-3122.7	-3137.9	-3158.0	-3195.2	-3228.0	-3250.4	-3266.4	4.0	7.2	8.2	
CSIR (Pretoria)	-4887.7	-4986.7	-5103.9	5079.7	5006.1	4926.8	4847.6	3.0	20.1	20.3	(2)
DLR (Oberpfaffenhofen)	-67.0	-64.7	-69.9	-70.8	-65.5	-64.5	-66.4	0.8	5.2	5.3	
DTAG (Darmstadt)	222.3	210.8	217.4	223.5	222.1	205.7	199.9	3.0	10.1	10.5	
HKO (Hong Kong)	22.1	28.6	28.7	27.4	29.6	24.3	23.6	3.2	6.5	7.2	
IEN (Torino)	3.4	-5.3	9.0	-0.1	10.0	9.7	18.1	0.7	2.2	2.3	
IFAG (Wettzell)	-260.7	-252.3	-249.0	-242.0	-230.1	-231.1	-232.9	0.8	5.2	5.3	
IGMA (Buenos Aires)	393.8	-	-	401.6	417.7	416.0	412.6	5.0	20.1	20.7	
INPL (Jerusalem)	-812.3	-834.3	-849.2	-862.4	-881.7	-902.5	-921.2	4.0	10.1	10.9	
JATC (Lintong)	-9787.7	-9780.3	-9780.9	-9778.8	-9775.7	-9773.9	-9768.6	2.7	21.0	21.2	
JV (Kjeller)	-6042.0	-6031.2	-5984.8	-5948.7	-5917.7	-5912.0	-5892.1	5.0	20.0	20.6	
KRIS (Daejeon)	-8.3	-8.1	-4.1	-4.5	-11.4	-6.7	-4.8	2.7	6.4	6.9	
LDS (Leeds)	2921.5	2938.2	2970.7	3016.1	3048.5	3076.9	3106.0	3.0	20.0	20.2	
LT (Vilnius)	278.5	315.9	353.4	388.5	423.1	453.7	494.6	1.6	5.2	5.4	
MIKE (Espoo)	4226.4	4167.1	4120.5	4060.5	4010.6	3947.4	3871.0	5.0	20.1	20.7	
MSL (Lower Hutt)	-88.4	-100.6	-122.6	-146.3	-163.8	-173.8	-179.5	2.3	20.4	20.5	
NAO (Mizusawa)	12.2	27.0	27.6	41.2	39.9	48.7	51.9	3.2	19.9	20.2	
NICT (Tokyo)	12.4	15.9	18.1	12.3	15.6	11.6	14.5	1.2	4.1	4.3	
NIM (Beijing)	-42.2	-42.4	-38.8	-48.3	-47.8	-46.0	-43.8	3.2	20.2	20.5	
NIMB (Bucharest)	-462.2	-456.7	-454.1	-462.0	-455.4	-476.5	-489.1	2.5	20.1	20.3	
NIMT (Bangkok)	-2172.0	-2240.6	-2310.2	-2369.4	-2436.8	-2502.9	-2574.3	1.6	20.4	20.5	
NIS (Cairo)	-	-	-	-	-	-	-	-	-	-	

Date 2005 0h UTC	JUN 28	JUL 3	JUL 8	JUL 13	JUL 18	JUL 23	JUL 28	Uncertainty/ns			Notes
MJD	53549	53554	53559	53564	53569	53574	53579				
Laboratory *k*				[*UTC-UTC*(*k*)]/ns				u_A	u_B	u	(1)
NIST (Boulder)	10.5	8.3	8.4	6.8	4.3	0.9	-1.9	0.6	4.9	4.9	
NMC (Sofiya)	-3888.0	-3910.6	-3925.3	-3920.6	-3923.7	-3938.7	-3944.5	5.0	20.0	20.6	
NMIJ (Tsukuba)	6.9	1.8	12.5	14.0	7.8	0.8	-2.0	1.4	6.4	6.6	
NMLS (Shah Alam)	-254.5	-253.2	-249.4	-254.0	-261.1	-261.2	-263.1	3.2	20.4	20.6	
NPL (Teddington)	8.8	9.6	9.6	9.4	10.0	9.4	11.0	0.7	2.1	2.2	
NPLI (New-Delhi)	551.3	375.9	380.0	384.7	388.7	395.9	404.2	2.5	7.2	7.6	(3)
NRC (Ottawa)	-18.2	-19.0	-25.1	-36.7	-36.8	-37.7	-30.4	3.0	14.7	15.0	
NTSC (Lintong)	21.2	21.3	17.3	18.6	20.3	19.8	21.0	2.7	6.4	6.9	
OMH (Budapest)	10154.7	10168.9	10188.4	10203.5	10235.0	10251.7	10262.1	2.5	20.0	20.2	
ONBA (Buenos Aires)	-2358.0	-2353.8	-2408.1	-2355.0	-2353.7	-2287.0	-2268.4	5.0	7.2	8.8	
ONRJ (Rio de Janeiro)	3537.2	3584.7	3639.3	3693.1	3737.6	3790.0	3836.8	5.0	20.6	21.2	
OP (Paris)	24.0	27.3	36.6	37.7	32.5	18.6	24.1	0.6	2.1	2.2	
ORB (Bruxelles)	53.0	53.1	52.3	50.4	50.0	46.5	43.4	0.8	5.2	5.3	
PL (Warszawa)	-9.3	0.2	3.4	0.6	7.0	15.2	15.1	1.5	5.0	5.2	
PTB (Braunschweig)	29.5	30.2	29.1	27.9	22.6	14.2	12.7	0.4	1.5	1.6	
ROA (San Fernando)	-22.2	-20.9	-19.9	-8.1	1.0	4.7	-28.2	2.5	5.2	5.8	(4)
SCL (Hong Kong)	15.9	17.1	12.5	2.7	7.8	-1.4	3.3	4.2	10.8	11.6	
SG (Singapore)	-84.2	-65.6	-62.6	-47.5	-36.0	-30.6	-12.6	3.2	20.2	20.5	
SMU (Bratislava)	-65.9	-64.6	-68.2	-65.1	-78.6	-82.0	-72.2	5.0	20.0	20.6	
SP (Boras)	105.1	103.3	95.3	87.7	80.2	68.5	61.9	0.8	9.7	9.7	
SU (Moskva)	33.3	31.1	26.7	26.0	25.4	21.8	18.0	3.0	5.2	6.0	
TCC (Concepcion)	-1706.6	-1704.9	-1716.4	-1724.7	-1728.9	-1765.3	-1780.0	5.0	20.4	21.0	
TL (Chung-Li)	76.6	74.5	71.1	64.4	63.3	61.3	59.5	1.4	6.3	6.5	
TP (Praha)	-3.5	3.8	8.7	31.1	40.5	48.0	50.2	2.5	5.2	5.8	
UME (Gebze-Kocaeli)	794.1	796.3	810.2	828.1	836.3	839.7	854.7	15.0	20.1	25.1	
USNO (Washington DC)	2.4	2.3	2.1	1.4	1.8	0.6	0.2	0.5	1.6	1.7	
VSL (Delft)	99.4	112.5	114.3	114.3	107.0	99.0	87.7	0.7	3.4	3.5	

- Notes on section 1:

(1) u is the combined standard uncertainty in [*UTC-UTC*(*k*)]. u_A and u_B are the components of this uncertainty calculated from the Type A and Type B components listed in Section 6. These uncertainties are valid only for the period MJD 53549 - 53579.
Ref.: Lewandowski W., Matsakis D., Panfilo G., Tavella P., '*First evaluation and experimental results on the determination of uncertainties in* [*UTC - UTC*(*k*)]', Proc. 36th *PTTI*, 2004, pp. 247-261.
(2) CSIR : Time step of UTC(CSIR) of -10300 ns on MJD 53559.
(3) NPLI : Apparent time step of UTC(NPLI) of about 176 ns on MJD 53550 due to change of GPS equipment.
(4) ROA : Time step of UTC(ROA) of 42.9 ns between MJD 53577.45 and 53578.30.

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

Date 2005 0h UTC	JUN 28	JUL 3	JUL 8	JUL 13	JUL 18	JUL 23	JUL 28	
MJD	53549	53554	53559	53564	53569	53574	53579	
Laboratory *k*				[*TAI-TA*(*k*)]/ns				
CH (Bern)	50248.7	50298.1	50355.6	50405.4	50458.9	50505.5	50555.7	
F (Paris)	168786.5	168778.2	168767.5	168757.9	168749.3	168734.2	168728.1	
IEN (Torino)	45189.8	45293.0	45396.2	45493.1	45593.1	45690.7	45794.6	
JATC (Lintong)	-37411.7	-37417.3	-37432.9	-37452.8	-37472.7	-37490.9	-37506.6	
KRIS (Daejeon)	9176.0	9202.6	9232.1	9257.8	9278.1	9308.2	9335.9	
NICT (Tokyo)	204567.6	204781.0	204992.4	205199.4	205409.0	205616.5	205828.8	
NIST (Boulder)	-45280030.9	-45280225.6	-45280418.0	-45280612.1	-45280807.1	-45281003.0	-45281198.3	
NRC (Ottawa)	29151.9	29155.6	29153.7	29146.3	29150.6	29154.0	29165.5	
NTSC (Lintong)	1302.4	1330.4	1349.6	1371.1	1396.7	1418.3	1442.8	
PL (Warszawa)	-3165.6	-3168.7	-3172.2	-3182.6	-3188.0	-3191.5	-3200.3	
PTB (Braunschweig)	-358686.3	-358678.1	-358671.6	-358665.3	-358663.1	-358663.9	-358657.9	
SU (Moskva)	27241457.7	27241466.7	27241473.5	27241484.1	27241494.7	27241502.3	27241509.8	(1)
TL (Chung-Li)	89.5	91.6	94.1	97.9	98.1	103.1	106.7	
USNO (Washington DC)	-34956796.7	-34957104.6	-34957411.6	-34957718.7	-34958025.0	-34958333.6	-34958641.1	

- 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	53549 - 53579	6.878×10^{-13}	(2005 JUN 28 - 2005 JUL 28)
New correction	53579 - 53609	6.876×10^{-13}	(2005 JUL 28 - 2005 AUG 27)
New correction foreseen	53609 - 53639	6.870×10^{-13}	(2005 AUG 27 - 2005 SEP 26)

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 $6.0 \times 10^{-15} / \sqrt{\tau}$, (2) a flicker frequency noise of 0.6×10^{-15} and (3) a random walk frequency noise of $1.6 \times 10^{-16} \times \sqrt{\tau}$. The relation between EAL and TAI is given in *Circular T* and the *Annual Report of the BIPM Time Section*.

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, Ref(u_B) is a reference giving information on the stated value of u_B or is the *Circular T* where this reference was first given, $u_{l/lab}$ 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. All values are expressed in 10^{-15}.

Standard	Period of Estimation		*d*	u_A	u_B	Ref(u_B)	$u_{l/Lab}$	$u_{l/Tai}$	*u*	Note
SYRTE-JPO	53514	53534	16.4	0.5	6.3	T160	0.3	1.5	6.5	(1)
NIST-F1	53529	53559	6.3	0.4	0.3	T182	0.2	1.0	1.1	(2)
SYRTE-JPO	53554	53569	9.1	0.8	6.3	T160	0.3	2.0	6.7	(3)
PTB-CS1	53549	53579	3.3	5.0	8.0	T148	0.0	1.0	9.5	(4)
PTB-CS2	53549	53579	5.9	3.0	12.0	T148	0.0	1.0	12.4	(4)

Notes:
(1) Report 22 July 2005 by LNE-SYRTE.
(2) Report 28 July 2005 by NIST.
(3) Report 3 August 2005 by LNE-SYRTE.
(4) Continuously operating as a clock participating to TAI.

The second table gives the BIPM estimate of *d*, based on all available PFS measurements over the period MJD 53189-53579, 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*	
53549-53579	5.9×10^{-15}	1.8×10^{-15}	(2005 JUN 28 - 2005 JUL 28)

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

[*UTC-GPS time*] = -13 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*] = 32 s + C_1, global uncertainty is of order hundreds ns.

The C_0 values are 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 are 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. 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 = 2.0 ns, σ_1 = 15.0 ns

Date 2005 0h UTC	MJD	C_0/ns	N_0	C_1/ns	N_1
JUN 28	53549	-8.7	46	117.1	74
JUN 29	53550	-6.4	45	121.8	82
JUN 30	53551	-5.0	44	132.1	81
JUL 1	53552	-0.7	43	133.2	75
JUL 2	53553	-3.4	44	113.4	63
JUL 3	53554	-6.6	45	112.5	67
JUL 4	53555	-4.5	44	124.9	75
JUL 5	53556	-5.5	43	126.2	79
JUL 6	53557	-6.9	44	134.6	73
JUL 7	53558	-6.0	42	146.5	68
JUL 8	53559	-3.5	44	138.3	79
JUL 9	53560	-4.0	45	134.5	81
JUL 10	53561	-1.0	45	136.0	68
JUL 11	53562	-2.3	44	136.5	83
JUL 12	53563	-3.7	44	133.2	88
JUL 13	53564	-3.9	45	129.9	79
JUL 14	53565	-7.5	45	136.6	54
JUL 15	53566	-7.9	43	131.3	72
JUL 16	53567	-9.4	45	122.6	87
JUL 17	53568	-9.7	45	118.5	89
JUL 18	53569	-8.5	44	110.8	90
JUL 19	53570	-9.8	45	101.0	89
JUL 20	53571	-11.1	45	93.3	88
JUL 21	53572	-14.1	44	89.3	82
JUL 22	53573	-11.8	44	86.5	64
JUL 23	53574	-8.1	44	92.3	78
JUL 24	53575	-8.7	40	80.2	83
JUL 25	53576	-9.0	42	61.4	83
JUL 26	53577	-7.1	43	61.7	83
JUL 27	53578	-4.5	41	62.5	86
JUL 28	53579	-7.0	42	63.2	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 common-view single-channel C/A data; GPS MC for GPS common-view multi-channel C/A data; GPS P3 for GPS common-view multi-channel dual-frequency P code data; GPS GT for 'GPS time' observations; 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 uncertainty on the calibration, estimated by the BIPM.

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.

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	2003 Sep/2003 Aug
APL /USNO	GPS MC	1.5	5.0	GPS EC /GPS EC	2003 Dec/2003 Dec
AUS /NICT	GPS MC	3.0	5.0	GPS EC/GPS EC	2002 Sep/2003 Nov
BEV /PTB	GPS MC	1.5	5.0	GPS EC/GPS EC	2001 Dec/2003 Aug
BIRM/NICT	GPS MC	2.5	20.0	NA /GPS EC	NA /2003 Nov
CAO /PTB	GPS MC	1.5	7.0	GPS EC/GPS EC	2004 Nov/2003 Aug
CH /PTB	GPS P3	0.7	5.0	GPS EC/GPS EC	2004 Nov/2004 Aug
CNM /NIST	GPS SC	5.0	20.0	NA /GPS EC	NA /2003 Dec
CNMP/USNO	GPS MC	4.0	7.0	GPS EC/GPS EC	2002 Oct/2003 Dec
CSIR/PTB	GPS MC	3.0	20.0	NA /GPS EC	NA /2003 Aug
DLR /PTB	GPS P3	0.7	5.0	GPS EC/GPS EC	2003 Apr/2004 Aug
DTAG/PTB	GPS SC	3.0	10.0	GPS EC/GPS EC	1998 May/2003 Aug
HKO /NICT	GPS MC	3.0	5.0	GPS EC/GPS EC	2004 Apr/2003 Nov
IEN /PTB	TWSTFT	0.5	1.5	BC (TWSTFT)	2005 May
IFAG/PTB	GPS P3	0.7	5.0	GPS EC/GPS EC	2003 Jun/2004 Aug
IGMA/USNO	GPS MC	5.0	20.0	NA /GPS EC	NA /2003 Dec
INPL/PTB	GPS SC	4.0	10.0	GPS EC/GPS EC	1987 Jun/2003 Jun
JATC/NTSC	INT LK	0.2	20.0	NA	NA
JV /PTB	GPS GT	5.0	20.0	NA /GPS EC	NA /2003 Aug
KRIS/NICT	GPS MC	2.5	5.0	GPS EC/GPS EC	2003 Oct/2003 Nov

Link	Type	u_A/ns	u_B/ns	Calibration Type	Calibration Dates
LDS /PTB	GPS SC	3.0	20.0	NA /GPS EC	NA /2003 Aug
LT /PTB	GPS MC	1.5	5.0	GPS EC/GPS EC	2001 Nov/2003 Aug
MIKE/PTB	GPS MC	5.0	20.0	NA /GPS EC	NA /2003 Aug
MSL /NICT	GPS P3	2.0	20.0	NA /GPS EC	NA /2005 Jun
NAO /NICT	GPS SC	3.0	20.0	NA /GPS EC	NA /2003 Nov
NICT/PTB	GPS P3	1.5	5.0	GPS EC/GPS EC	2005 Jun/2004 Aug
NIM /NICT	GPS SC	3.0	20.0	NA /GPS EC	NA /2003 Nov
NIMB/PTB	GPS MC	2.5	20.0	NA /GPS EC	NA /2003 Aug
NIMT/NICT	GPS P3	1.0	20.0	NA /GPS EC	NA /2005 Jun
NIS	NA				
NIST/PTB	TWSTFT	0.5	5.0	BC(GPS P3)	2005 May
NMC /PTB	GPS SC	5.0	20.0	NA /GPS EC	NA /2003 Aug
NMIJ/NICT	GPS P3	0.7	5.0	GPS EC/GPS EC	2002 Apr/2005 Jun
NMLS/NICT	GPS MC	3.0	20.0	NA /GPS EC	NA /2003 Nov
NPL /PTB	TWSTFT	0.5	1.5	BC(GPS P3)	2005 May
NPLI/PTB	GPS MC	2.5	7.0	GPS EC/GPS EC	2005 Jul/2003 Aug
NRC /USNO	GPS SC	3.0	15.0	GPS EC/GPS EC	1982 /2003 Dec
NTSC/NICT	GPS MC	2.5	5.0	GPS EC/GPS EC	2002 Aug/2003 Oct
OMH /PTB	GPS SC	2.5	20.0	NA /GPS EC	NA /2003 Aug
ONBA/USNO	GPS MC	5.0	7.0	GPS EC/GPS EC	2000 Oct/2003 Dec
ONRJ/NIST	GPS SC	5.0	20.0	NA /GPS EC	NA /2003 Dec
OP /PTB	TWSTFT	0.5	1.5	BC(GPS P3)	2005 May
ORB /PTB	GPS P3	0.7	5.0	GPS EC/GPS EC	2003 Jul/2004 Aug
PL /PTB	GPS MC	1.5	5.0	GPS EC/GPS EC	2001 Oct/2003 Aug
ROA /PTB	GPS SC	2.5	5.0	GPS EC/GPS EC	2002 Mar/2003 Aug
SCL /NICT	GPS SC	4.0	10.0	GPS EC/GPS EC	1993 May/2003 Nov
SG /NICT	GPS MC	3.0	20.0	NA /GPS EC	NA /2003 Nov
SMU /PTB	GPS SC	5.0	20.0	NA /GPS EC	NA /2003 Aug
SP /PTB	GPS P3	0.7	10.0	LC(GPS SC)	2004 Nov
SU /PTB	GPS SC	3.0	5.0	GPS EC/GPS EC	2003 Apr/2003 Aug
TCC /NIST	GPS SC	5.0	20.0	NA /GPS EC	NA /2003 Dec
TL /NICT	GPS P3	0.7	5.0	GPS EC/GPS EC	2005 May/2005 Jun
TP /PTB	GPS SC	2.5	5.0	GPS EC/GPS EC	2001 Oct/2003 Aug
UME /PTB	GPS SC	15.0	20.0	NA /GPS EC	NA /2003 Aug
USNO/PTB	TWSTFT	0.5	1.1	BC(TW X-Band)	2005 May
VSL /PTB	TWSTFT	0.5	3.0	BC(GPS SC)	2005 May