TIME DISSEMINATION SERVICES

The following tables are based on information received at the BIPM between March and May 2021.

AUTHORITIES RESPONSIBLE FOR TIME DISSEMINATION SERVICES

AOS	Astrogeodynamical Observatory Borowiec near Poznan Space Research Centre P.A.S. PL 62-035 Kórnik - Poland
AUS	Electricity Section National Measurement Institute 36 Bradfield Rd Lindfield NSW 2070 - Australia
BelGIM	Belarussian State Institute of Metrology National Standard for Time, Frequency and Time-scale of the Republic of Belarus Minsk, Minsk Region – 220053 Belarus
BEV	Bundesamt für Eich- und Vermessungswesen Arltgasse 35 A-1160 Wien, Vienna - Austria
BoM	Ministry of economy - Bureau of metrology Jane Sandanski 109a 1000 Skopje, Macedonia
CENAM	Centro Nacional de Metrología Dirección de Tiempo y Frecuencia km. 4.5 carretera a Los Cués El Marqués, Querétaro 76246, México.
CENAMEP	Centro Nacional de Metrología de Panamá AIP CENAMEP AIP Ciudad del Saber Edif. 206 Panama
DMDM	Directorate of Measures and Precious Metals Section for electrical quantities, time and frequency Mike Alasa 14 11000 Belgrade Serbia
EIM	Hellenic Institute of Metrology Electrical Measurements Department Block 45, Industrial Area of Thessaloniki PO 57022, Sindos Thessaloniki, Greece
GUM	Time and Frequency Laboratory Główny Urząd Miar – Central Office of Measures ul. Elektoralna 2 PL 00 – 139 Warszawa, Poland
HKO	Hong Kong Observatory 134A, Nathan Road Kowloon, Hong Kong, China

ICE	Instituto Costarricense de Electricidad ICE San Jose Costa Rica
IGNA	Instituto Geográfico Nacional Argentino Servicio Internacional de la Hora General Manuel N. Savio 1898 B1650KLP – Villa Maipú, Provincia de Buenos Aires, Argentina
ILNAS	Bureau Luxembourgeois de Métrologie Laboratoire Temps Fréquence 22 avenue des Hauts Fourneaux L-4362 Esch-sur-Alzette, Luxembourg
IMBH	Institute of Metrology of Bosnia and Herzegovina (IMBH) Laboratory for time and frequency Augusta Brauna 2 71000 Sarajevo, Bosnia and Herzegovina
INACAL	Instituto Nacional de Calidad Calle De La Prosa 150 Código postal 15034 San Borja, Lima 41, Peru
INM	Instituto Nacional de Metrología de Colombia Avenida Carrera 50 No. 26 – 55 Interior 2 Bogotá D.C. – Colombia
INPL	National Physical Laboratory of Israel Ministry of Economy and Industry Bank of Israel Street, 5, Jerusalem 9103101 P.O.B. 3166; Tel.: +972-(0)74-7215923 Israel
INRIM	Istituto Nazionale di Ricerca Metrologica Strada delle Cacce, 91 I – 10135 Turin, Italy
INTI	Instituto Nacional de Tecnología Industrial Av. General Paz Nº 5445 B1650WAB San Martín Buenos Aires, Argentina
JV	Justervesenet Norwegian Metrology Service PO Box 170 2027 Kjeller, Norway
KRISS	Center for Time and Frequency Division of Physical Metrology Korea Research Institute of Standards and Science 267 Gajeong-Ro, Yuseong Daejeon 34113 Republic of Korea
KZ	Kazakhstan Institute of Metrology Orynbor str., 11 Astana, Republic of Kazakhstan

LNE-SYRTE	Laboratoire National de Métrologie et d'Essais Systèmes de Référence Temps-Espace Observatoire de Paris 61, avenue de l'Observatoire, 75014 Paris – France
LRTE	Laboratório de Referências de Tempo e Espaço Grupo de Óptica University of São Paulo Av. Trabalhador Saocarlense, 400 13566-590 São Carlos, Brazil
LT	Time and Frequency Standard Laboratory Center for Physical Sciences and Technology Savanoriu av. 231 Vilnius LT-02300, Lithuania
MASM	Time and Frequency Standard Laboratory Mongolian Agency for Standardization and Metrology Peace avenue 46A, Bayanzurkh district, Ulaanbaatar 13343 Mongolia
METAS	Federal Institute of Metrology Sector Length, Optics and Time Lindenweg 50 CH-3003 Bern-Wabern Switzerland
MIKES	VTT Technical Research Centre of Finland Ltd Centre for Metrology MIKES P.O. Box 1000, FI-02044 VTT, Finland
MSL	Measurement Standards Laboratory Callaghan Innovation 69 Gracefield Road PO Box 31-310 Lower Hutt – New Zealand
NAO	Time Keeping Office Mizusawa VLBI Observatory National Astronomical Observatory of Japan 2-12, Hoshigaoka, Mizusawa, Oshu, Iwate 023-0861 Japan
NICT	Space-Time Standards Laboratory National Institute of Information and Communications Technology 4 -2 -1, Nukui-kitamachi Koganei, Tokyo 184-8795 - Japan
NIM	Time & Frequency Division National Institute of Metrology No. 18, Bei San Huan Dong Lu Beijing 100029 - People's Republic of China
NIMB	Time and Frequency Laboratory National Institute of Metrology Sos. Vitan - Barzesti, 11 042122 Bucharest, Romania

NIMT
Time and Frequency Laboratory
National Institute of Metrology (Thailand)
3/5 Moo 3, Klong 5, Klong Luang,
Pathumthani 12120, Thailand

NIST
National Institute of Standards and Technology
Time and Frequency Division, 688.00
325 Broadway
Boulder, Colorado 80305, USA

NMIJ
Time Standards Group
National Metrology Institute of Japan (NMIJ), AIST
Umezono 1-1-1, Tsukuba, Ibaraki 305-8563, Japan

NMISA
Time and Frequency Laboratory
National Metrology Institute of South Africa
Private Bag X34
Lynnwood Ridge 0040, Pretoria - South Africa

NMLS
Time and Frequency Laboratory
National Metrology Institute of Malaysia
Lot PT 4803, Bandar Baru Salak Tinggi,
43900 Sepang - Malaysia

NPL
National Physical Laboratory
Time and Frequency Department
Hampton Road
Teddington, Middlesex TW11 0LW
United Kingdom

NPLI
Time and Frequency Metrology Section
CSIR-National Physical Laboratory
Dr.K.S.Krishnan Road
New Delhi 110012 - India

NRC
National Research Council of Canada
Metrology
Frequency and Time Standards
Bldg M-36, 1200 Montreal Road
Ottawa, Ontario, K1A 0R6, Canada

NSC IM
Time and Frequency Section
National Scientific Center "Institute of Metrology"
Kharkov - Ukraine Str. Mironositska 42
Region – 61002 Ukraine

NTSC
National Time Service Center
Chinese Academy of Sciences
3 East Shuyuan Rd, Lintong District, Xi’an
Shaanxi 710600, China

ONBA
Servicio de Hidrografía Naval
Observatorio Naval Buenos Aires
Servicio de Hora
Av. España 2099
C1107AMA – Buenos Aires, Argentina

ONRJ
Observatorio Nacional (MCTIC)
Divisão Serviço da Hora
Rua General José Cristino, 77 São Cristovão
20921-400 Rio de Janeiro, Brazil

ORB
Royal Observatory of Belgium
Avenue Circulaire, 3
B-1180 Brussels, Belgium

PTB
Physikalisch-Technische Bundesanstalt
Time and Frequency Department, WG 4. 42
Bundesallee 100
D-38116 Braunschweig, Germany

RISE
RISE Research Institutes of Sweden
Box 857
S-501 15 Borås
Sweden

ROA
Real Instituto y Observatorio de la Armada
Plaza de las Tres Marinas s/n
11.100 San Fernando
Cádiz, Spain

SG
National Metrology Centre
Agency for Science, Technology and Research (A*STAR)
1 Science Park Drive
118221 Singapore

SIQ
SIQ Ljubljana
Metrology department
Mašera-Spasićeva ulica 10
1000 Ljubljana
Slovenia

SL
Measurement Units, Standards and Services Department (MUSSD),
Mahenawatta, Pitipana,
Homagama, - Sri Lanka

SMD
FPS Economy
Directorate-General
Quality and Safety
Metrology
North Gate
Boulevard du Roi Albert II 16
1000 Brussels, Belgium

SNSU-BSN
Standar Nasional Satuan Ukuran --
Badan Standardisasi Nasional
National Measurement Standards --
National Standardization Agency
(SNSU-BSN)
Kawasan PUSPIPTEK Gedung 420
Serpong Tangerang 15314 Banten - Indonesia

TL
National Standard Time and Frequency Laboratory
Telecommunication Laboratories
Chunghwa Telecom. Co., Ltd.
No. 99, Dianyan Road
Yang-Mei, Taoyuan, 32661 Taiwan
Chinese Taipei

TP	Institute of Photonics and Electronics Czech Academy of Sciences Chaberská 57, 182 51 Praha 8 Czech Republic
UME	Ulusal Metroloji Enstitüsü Baris Mah. Dr. Zeki Acar Cad. No: 1 41470 Gebze - Kocaeli Turkey
USNO	U.S. Naval Observatory 3450 Massachusetts Ave., N.W. Washington, D.C. 20392-5420 USA
VMI	Laboratory of Time and Frequency (TFL) Vietnam Metrology Institute (VMI) No 8, Hoang Quoc Viet Rd, Cau Giay Dist., Hanoi Vietnam.
VNIIFTRI	All-Russian Scientific Research Institute for Physical Technical and Radiotechnical Measurements, Moscow Region 141570 Russia
VSL	VSL Dutch Metrology Institute Postbus 654 2600 AR Delft Netherlands

TIME DISSEMINATION SERVICES

AOS (1)	AOS Computer Time Service: vega.cbk.poznan.pl (150.254.183.15) Synchronization: NTP V3 primary (Caesium clock), PC Pentium, RedHat Linux Service Area: Poland/Europe Access Policy: open access Contact: Jerzy Nawrocki (nawrocki@cbk.poznan.pl) Robert Diak (kondor@cbk.poznan.pl)
AUS	Network Time Service Computers connected to the Internet can be synchronized to UTC(AUS) using the NTP protocol. The NTP servers are referenced to UTC(AUS) either directly or via a GPS common view link. Please see http://www.measurement.gov.au/Services/Pages/TimeandFrequencyDisseminationService.aspx for information on access or contact time@measurement.gov.au Dial-up Computer Time Service Computers can also obtain time via a modem connection to our dial-up timeserver. For further information, please see our web pages as above.
BelGIM	Internet Time Service: BelGIM operates one time server Stratum 1 using the "Network Time Protocol" (NTP). The server host name is: http://www.belgim.by (Stratum 1)
BEV	Three NTP servers are available; addresses: bevtime1.metrologie.at bevtime2.metrologie.at time.metrologie.at more information on http://www.metrologie.at Provides a time dissemination service via phone and modem to synchronize PC clocks. Uses the Time Distribution System from TUG. It has a baud rate of 1200 and everyone can use it with no cost. Access phone number is +43 1 21110 826381 The system will be updated periodically (DUT1, Leap Second…).
BoM	Internet Time Service BoM operates two Stratum 1 NTP servers referenced to UTC(BoM). BoM also operates one time server Stratum 2 using the "Network Time Protocol" (NTP). Server Host Name: time.bom.gov.mk
CENAM	CENAM operates a telephone voice system that provides the local time for time zones in Mexico. Phone numbers and zones: +52 (442) 211 0505 → Southeast Time +52 (442) 211 0506 → Central Time +52 (442) 211 0507 → Pacific Time +52 (442) 211 0508 → Northwest Time +52 (442) 211 0509 → UTC(CNM) Telephone Code CENAM provides a telephone code for setting time in computers. For more information about this service please contact tiempo@cenam.mx

(1) Information based on the Annual Report 2019, not confirmed by the Laboratory.

	Network Time Protocol (NTP) Operates two time servers using NTP (located at CENAM). Further information at http://www.cenam.mx/hora_oficial/
	Web-based time-of-day clock which displays local time for all Mexican time zones. Referenced to CENAM Internet Time Service. Available at http://www.cenam.mx/hora_oficial/
CENAMEP (1)	Network Time Server A Stratum 1 time server is used to synchronize computer networks of the government institutions and companies in the private sector using the NTP protocol. To access the Network time service, send an email to servicios@cenamep.org.pa
	Web Clock A web clock is used to display the time of day in real time. To access the Web Clock, enter the link http://horaexacta.cenamep.org.pa/
	Voice Time Server An assembly of computers provides the local time. To access the service, call the telephone numbers (507) 5173201, (507) 5173202 and (507) 5173203
DMDM	Internet Time Service (ITS) DMDM operates two Stratum 1 time servers using the “Network Time Protocol” (NTP), synchronized to UTC(DMDM). Access policy: restricted. DMDM also operates two Stratum 2 NTP servers: vreme1.dmdm.rs or vreme1.dmdm.gov.rs vreme2.dmdm.rs or vreme2.dmdm.gov.rs Access policy: free.
	Web-based time-of-day clock that displays local time for Serbia referenced to the DMDM ITS. Available at the web page: http://www.dmdm.rs/en/index.php
EIM	Internet Time Service EIM operates a time server using the “Network Time Protocol” (NTP). The address hercules.eim.gr is also accessible through IP address 83.212.233.6. This route is offered under a restricted access policy. The server uses the 10 MHz signal from our primary standard as reference and is synchronized to UTC(EIM).
GUM	Telephone Time Service providing the European time code by telephone modem for setting time in computers. Includes provision for compensation of propagation time delay. Access phone number : +48 22 654 88 72
	Network Time Service Two NTP servers are available: tempus1.gum.gov.pl tempus2.gum.gov.pl with an open access policy. It provides synchronization to UTC(PL). Contact: time@gum.gov.pl
	Web Clock A web clock is used to display the local time in Poland referred to the GUM NTP servers. Available at the web page: http://czas.gum.gov.pl

(1) Information based on the Annual Report 2019, not confirmed by the Laboratory.

HKO	Internet Clock Services HKO operates time-of-day clocks that display Hong Kong Standard Time (=UTC(HKO) + 8 h) Available as web clock at https://www.hko.gov.hk/en/gts/time/clock_e.html Speaking Clock Service HKO operates an automatic “Dial-a-weather System” that provides a voice announcement of Hong Kong Standard Time. Access phone number: +852 1878200 (when connected, press “3”, “6”, “1” in sequence) Network Time Service HKO operates network time service using Network Time Protocol (NTP). Host names of the NTP servers: stdtime.gov.hk; time.hko.hk (for IPv6 users) Further information at https://www.hko.gov.hk/en/nts/ntime.htm
ICE	Network Time Server A Stratum 1 time server is used to synchronize computer networks of the government institutions and companies in the private sector using the NTP protocol. To access the Network time service, send an email to ofallasc@ice.go.cr Web Clock A web clock is used to display the time of day in real time. To access the Web Clock, enter the link: https://www.grupoice.com/wps/portal/ICE/Electricidad/servicios-especiales/laboratorios
IGNA (1)	GPS common-view data GPS common-view data using CGGTTS format referred to UTC(IGNA) is available through our website at http://www.ign.gob.ar/NuestrasActividades/Geodesia/ServicioInternacionalHora/TransferenciaDeTiempo
ILNAS	Network Time Service via NTP Protocol Stratum-1 time server with monitoring (restricted access) Host names: ntp1.ilnas.blm.lu ntp2.ilnas.blm.lu ntp3.ilnas.blm.lu Further information at: https://portail-qualite.public.lu/fr/metrologie/etalonnages.html
IMBH	Internet Time Service IMBH operates several Stratum 1 time servers using the NTP protocol. These servers are directly synchronized to UTC(IMBH). The servers are available at IP addresses: 185.12.78.85 and 77.78.199.17 Common-view data GPS and GLONASS common-view data using CGGTTS format referred to UTC(IMBH) are available at request. Further information can be found at: http://met.gov.ba

(1) Information based on the Annual Report 2019, not confirmed by the Laboratory.

INACAL	Network Time Server A time server is used to synchronize computer networks of the government institutions and companies in the private sector using the NTP protocol. To access the Network time enter the link https://www.inacal.gob.pe/metrologia/categoria/sincronizacion-de-sistemas-de-computo Web Clock A web clock is used to display the time of day in real time. To access the Web Clock, enter the link https://www.inacal.gob.pe/
INM	Network Time Protocol Operates a time server using the “Network Time Protocol”, it is located at the Instituto Nacional de Metrología de Colombia, Bogotá D.C., Colombia. Further information at: http://www.inm.gov.co/index.php/servicios-inm/hora-legal Web Clock Service A web clock is used to display the time of day in real time. The web clock is available at: http://horalegal.inm.gov.co/ 186.155.28.147 Voice Time Service Telephone voice announcements are followed by a tone to indicate the local time. The service is available to the public in Spanish by calling the telephone number (+571) 2542222 option 1.
INPL	Time dissemination service is performed in Israel by telecommunication companies, whose time and frequency standards are traceable to local UTC(INPL) time and are calibrated regularly once a year against the Israeli Time and Frequency National Standard kept by INPL.
INRIM	CTD Telephone Time Code Time signals dissemination, according to the European Time code format, available via modem on regular dial-up connection. Access phone numbers : 0039 011 3919 263 and 0039 011 3919 264. Provides a synchronization to UTC(IT) for computer clocks without compensation for the propagation time. Internet Time Service INRIM operates two time servers using the "Network Time Protocol" (NTP); host names of the servers are ntp1.inrim.it and ntp2.inrim.it. More information on this service can be found on the web pages: http://rime.inrim.it/labtf/ntp/. Web-based time-of-day clock that displays UTC or local time for Italy (Central Europe Time), referenced to INRIM Internet Time Service. Provides a snapshot of time with any web browser. A continuous time display requires a web browser with Java plug-in installed: http://rime.inrim.it/labtf/tempo-legale-italiano/. Fiber based PTP time signal distribution to linked users.
INTI	Network Time Service: INTI operates an open access NTP server referenced to UTC(INTI). Server Host Name: ntp.inti.gob.ar

JV	Network Time Protocol JV operates an open access stratum 1 server referenced to UTC(JV) ntp.justervesenet.no By special arrangement customers may get direct access to PPS from UTC(JV) as a reference for customer's own NTP-server(s) hosted at JV. PTP White Rabbit services are currently running on an experimental basis over dedicated link(s).
KRISS	Telephone Time Service Provides digital time code to synchronize computer clocks to Korea Standard Time (=UTC(KRIS) + 9 h) via modem. Access phone number: + 82 42 868 5116 Network Time Service KRISS operates three time servers using the NTP to synchronize computer clocks to Korea Standard Time via the Internet. Host name of the server: time.kriss.re.kr (210.98.16.100). Software for the synchronization of computer clocks is available at http://www.kriss.re.kr
KZ (1)	Network Time Service Stratum-1 time server using the "Network Time Protocol" (NTP). Restricted access and free access ip 89.218.41.170 Stratum-2 time server using the "Network Time Protocol" (NTP). Free access. Stratum-2 is available: ip 88.204.171.178 Web-based Time Services: A real-time clock aligned to UTC(KZ) and corrected for internet transmission delay. "Six-pip time signals" are broadcast by FM radio stations hourly every day.
LNE-SYRTE	LNE-SYRTE operates several time servers using the "Network Time Protocol" (NTP) : Stratum-1 time server: ntp-p1.obspm.fr (restricted access) Stratum-2 time server: ntp.obspm.fr (free access) Futher information at: http://syrte.obspm.fr/informatique/ntp_infos.php
LRTE	Internet Time Service LRTE operates Stratum 1 and Stratum 2 time servers using the NTP protocol. The servers are directly synchronized to UTC(LRTE). The servers are available on free access at hostnames/ip : lrte.ntp.ifsc.usp.br / 143.107.229.211 -> stratum 1 ntp1.ifsc.usp.br / 143.107.229.210 -> stratum 2 Further information available at http://lrte.ntp.ifsc.usp.br/ https://www.ntppool.org/scores/143.107.229.211 https://www.ntppool.org/scores/143.107.229.210 https://thingspeak.com/channels/691405
LT	Network Time Service via NTP protocol NTP v3 Host name: laikas.pfi.lt Directly referenced to UTC(LT) System: Datum TymeServe 2100 NTP server Access policy: free Further information available at https://www.ftmc.lt/time-and-frequency-standard-laboratory

(1) Information based on the Annual Report 2019, not confirmed by the Laboratory.

MASM	Network Time Service via NTP It provides synchronization to UTC(MASM) Address: ntp.mn System: LANTIME M600 Access policy: free
METAS	Internet Time Service METAS operates three public stratum 1 NTP servers in open access policy, namely: ntp11.metas.ch ntp12.metas.ch ntp13.metas.ch The alias ntp.metas.ch points to one of the above servers. More information available at http://www.metas.ch/metas/en/home/fabe/zeit-und-frequenz/time-dissemination.html
MIKES	VTT MIKES provides an official stratum-1 level NTP service to paying organizations and institutions. Stratum-2 level NTP service is freely available to everyone. Both NTP services are provided over public internet. PTP and PTP White Rabbit services are provided to individual customers over dedicated links. Further information can be found at http://www.mikes.fi/ntp-palvelu/
MSL	Network Time Service Computers connected to the Internet can be synchonized to UTC(MSL) using the NTP protocol. Access is available for users within New Zealand. Servers are available at pool.msltime.measurement.govt.nz and msltime1.measurement.govt.nz Speaking Clock A speaking clock gives New Zealand time. Because it is a pay service, access is restricted to callers within New Zealand. Further information about these services can be found at http://measurement.govt.nz/about-us/official-new-zealand-time
NAO	Network Time Service Three stratum 2 NTP servers are available. The NTP servers internally refer stratum 1 NTP server that is linked to UTC(NAO). One of the three stratum 2 NTP servers are selected automatically by a round-robin DNS server to reply for an NTP access. The server host name is s2csntp.miz.nao.ac.jp.
NICT	Telephone Time Service (TTS) NICT provides digital time code accessible by computer at 300/1200/2400 bps, 8 bits, no parity. Access number to the lines: + 81 42 327 7592. Optical IP Telephone Time Service (OTTS) NICT provides digital time code accessible by computer using Network Time Protocol, on Specific Optical IP Telephone lines and available only to agreement users. Network Time Service (NTS) NICT operates three Stratum 1 NTP time servers linked to UTC(NICT) through a leased line. Internet Time Service (ITS) NICT operates five Stratum 1 NTP time servers linked to UTC(NICT) through the Internet, where one server is located in Kobe branch. Host name of the servers: ntp.nict.jp (Round robin).

	GPS common view data NICT provides the GPS common view data based on UTC(NICT) to the time business service in Japan.
NIM (1)	Telephone Time Service The coded time information generated by NIM time code generator, referenced to UTC(NIM). Telephone Code provides digital time code at 1200 to 9600 bauds, 8 bits, no parity, 1 stop bit. Access phone number: 8610 6422 9086. Network Time Service Provides digital time code across the Internet using NTP server via free IP access: ntp1.nim.ac.cn ntp2.nim.ac.cn
NIMB	1 NTP server is available: Address: ntp.inm.ro (STRATUM 1) with an open access policy Server is referenced to UTC(NIMB).
NIMT	Internet Time Services NIMT operates 3 NTP servers at: time1.nimt.or.th time2.nimt.or.th time3.nimt.or.th The NTP servers are referenced to UTC(NIMT). FM/RDS Radio Transmission The time code is applied to the sub-carrier frequency of 57 kHz using the Radio Data System protocol. The accuracy of time transmission is around 30 ms of UTC(NIMT) depending on the internet traffic. The time code is broadcast via 40 radio stations across the country.
NIST	Automated Computer Time Service (ACTS) Provides digital time code by telephone modem for setting time in computers. Free software and source code available for download from NIST. Includes provision for calibration of telephone time delay. Access phone numbers : +1 303 494 4774 (4 phone lines) and +1 808 335 4721 (2 phone lines). Further information at https://www.nist.gov/pml/time-and-frequency-division/services/automated-computer-time-service-acts Web-based time-of-day clock: https://time.gov Internet Time Service (ITS) Provides digital time code across the Internet using three different protocols: Network Time Protocol (NTP), Daytime Protocol, and Time Protocol. (Time Protocol is not supported by all servers) Geographically distributed set of multiple time servers at multiple locations within the United States of America. For most current listing of time servers and locations, see: http://tf.nist.gov/tf-cgi/servers.cgi Free software and source code available for download from NIST. Further information at https://www.nist.gov/pml/time-and-frequency-division/services/internet-time-service-its Telephone voice announcement: Audio portions of radio broadcasts from time and frequency stations WWV and WWVH can be heard by telephone: +1 303 499 7111 for WWV and +1 808 335 4363 for WWVH. For more information see: https://www.nist.gov/pml/time-and-frequency-division/radio-stations/wwv/telephone-time-day-service

(1) Information based on the Annual Report 2019, not confirmed by the Laboratory.

Time Measurement and Analysis Service (TMAS) and NIST Disciplined Clock (NISTDC)

Subscription-based calibration services that utilize GPS common-view measurements and can either measure a clock with respect to UTC(NIST), or discipline an atomic clock to agree with UTC(NIST) with an uncertainty of ~10 ns (k = 2). The NISTDC can be either a rubidium clock supplied by NIST or a cesium clock supplied by the customer. For more information see:

https://www.nist.gov/programs-projects/time-measurement-and-analysis-service-tmas

NMIJ

GPS common-view data
GPS common-view data using CGGTTS format referred to UTC(NMIJ) are available through the NMIJ's web site for the remote frequency calibration service.

NMISA

Network Time Service
One open access NTP server is available at address time.nmisa.org.
More information is available at http://time.nmisa.org/

NMLS

Web-based time-of-day clock
A web clock is used to display the local time for Malaysia. The service is available at http://mst.sirim.my.

Network Time Service
The NTP time information is referenced to UTC(NMLS) and is currently generated by Stratum-1 NTP servers, made available to the public freely. The NTP server host names are ntp1.sirim.my and ntp2.sirim.my.

NPL

Internet Time Service
Two servers referenced to UTC(NPL) provide Network Time Protocol (NTP) time code across the internet.
More information is available from the NPL web site at www.npl.co.uk/time. The server host names are:
ntp1.npl.co.uk
ntp2.npl.co.uk

NPLI

Web clock
Web-based time-of-day clock that displays Indian Standard Time (IST) and UTC(NPLI). It also displays local time in user's time zone, time-of-day of the user's device clock and its difference. Available at the web page: http://www.nplindia.in/clockcode/html/index.php

Internet Time Service
Multiple Stratum 1 NTP servers referenced to UTC(NPLI) provide time service.
The server host names are:
time1.nplindia.org
time2.nplindia.org
time.nplindia.org (Round Robbin)
time.nplindia.in (Round Robbin)

NRC

Telephone Code
Provides digital time code by telephone modem for setting time in computers.
Access phone number: +1 613 745 3900.
https://nrc.canada.ca/en/certifications-evaluations-standards/canadas-official-time/computer-time-date

Talking Clock Service
Voice announcements of Eastern Time are at ten-second intervals followed by a tone to indicate the exact time.

	The service is available to the public in English at +1 613 745 1576 and in French at +1 613 745 9426. For more information see: https://nrc.canada.ca/en/certifications-evaluations-standards/canadas-official-time/telephone-talking-clock Web Clock Service The Web Clock shows dynamic clocks in each Canadian Time zone, for both Standard time and daylight saving time. The web page is at: https://nrc.canada.ca/en/web-clock/ Short Wave Radio CHU radio station broadcasts the time of day with voice announcements in English and French and time code at three different frequencies: 3.330 MHz, 7.850 MHz and 14.670 MHz. Further information at: https://nrc.canada.ca/en/certifications-evaluations-standards/canadas-official-time/nrc-shortwave-station-broadcasts-chu Network Time Protocol Operates multiple time servers using the " Network Time Protocol " at different locations and on two networks. Host names: time.nrc.ca and time.chu.nrc.ca. Further information at: https://nrc.canada.ca/en/certifications-evaluations-standards/canadas-official-time/network-time-protocol-ntp The official website for the Frequency and Time group is: https://nrc.canada.ca/en/certifications-evaluations-standards/canadas-official-time The contact email is: MSS-SMETime@nrc-cnrc.gc.ca
NSC IM	Network Time Service. National Science Center Institute of Metrology (Kharkiv, Ukraine) operates time server Stratum 1 using the “Network Time Protocol” (NTP). Stratum-1 time server using the "Network Time Protocol" (NTP). Free access. ip 81.17.128.133 ip 31.202.14.125 ip 31.202.14.124 PTP services are provided to individual customers over dedicated links. The server host name is: http://www.metrology.kharkov.ua/
NTSC	Network Time Service (NTS) NTSC operates a time server directly referenced to UTC(NTSC). Software for the synchronization of computer clocks is available on the NTSC Time and Frequency web page: http://www.ntsc.ac.cn/ Access Policy: free Contact: Shaowu DONG (sdong@ntsc.ac.cn).
ONBA	Speaking clock access phone number 113 (only accessible in Argentina). Hourly and half hourly radio-broadcast time signal. Internet time service at web site http://www.hidro.gov.ar/observatorio/lahora.asp
ONRJ	Telephone Voice Announcer (55) 21 25806037. Telephone Code (55) 21 25800677 provides digital time code at 300 bauds, 8 bits, no parity, 1 stop bit (Leitch CSD5300) Internet Time Service at the address : 200.20.186.75 and 200.20.186.94 SNTP at port 123 Time/UDP at port 37 Time/TCP at port 37 Daytime/TCP at port 13

WEB-based Time Services:
1) A real-time clock aligned to UTC(ONRJ) and corrected for internet transmission delay.
Further information at: http://200.20.186.71/asp/relogio/horainicial.asp
2) Voice Announcer, in Portuguese, each ten seconds, after download of the Web page at: http://200.20.186.71.

Broadcast Brazilian legal time (UTC – 3 hours) announced by a voice starting with “Observatório Nacional” followed by the current time (hh:mm:ss) each ten seconds with a beep for each second with a 1KHz modulation during 5ms and a long beep with 1KHz modulation during 200ms at the 58 , 59 and 00 seconds. The signal is transmitted every day of the year by the radio station PPE, whose signal is at 10 MHz with kind of modulation A3H and HF transmission power of 1 kW.

ORB

Network Time Service via NTP protocol
Hostname : ntp1.oma.be and ntp2.oma.be
Access policy : free
Synchronization to UTC(ORB)
Contact : ntp-as@oma.be

ORB provides a time dissemination via phone and modem to synchronize PC clocks on UTC(ORB). The system used is the Time Distribution System from TUG, which produces the telephone time code mostly used in Europe.
The baud rate used is 1200. The access phone number is 32 (0) 2 373 03 20. The system is updated periodically with DUT1 and leap seconds

PTB

Contact : time@ptb.de
Information on the web pages
https://www.ptb.de/time

Telephone Time Service
The coded time information is referenced to UTC(PTB) and generated by a TUG type time code generator using an ASCII-character code.
The time protocols are sent in a common format, the “European Telephone Time Code”. Access phone number: +49 531 51 20 38.

Internet Time Service
The PTB operates three time servers using the “ Network Time Protocol “ (NTP), see https://www.ptb.de/cms/en/ptb/fachabteilungen/abtq/gruppe-q4/ref-q42/time-synchronization-of-computers-using-the-network-time-protocol-ntp.html for details and explanations.

The hostnames of the servers are:
ptbtime1.ptb.de
ptbtime2.ptb.de
ptbtime3.ptb.de

Since 2020 PTB enhanced these time servers by Network Time Security (NTS). NTS is a security protocol specified in RFC 8915, which provides a scalable approach to protect NTP packets. PTB’s time servers provide NTS secured NTP service on network port 123.
PTB also provides a fee-based authenticated NTP service based on the NTP’s pre-shared key approach specified in RFC 5905. In 2018, the IETF published RFC 8673, which deprecates the usage of MD5 for the pre-shared key approach and replaces it with a message authentication code based on AES-CMAC as specified in RFC 4493. PTB’s authenticated time service has been enhanced in order to comply to RFC 8673.
The hostnames of the servers are:
ntpsmgw1.ptb.de
ntpsmgw2.ptb.de

PTB created a new service to distribute legal time via the WWW. The PTB clock is completely programmed in pure Hypertext Markup Language (HTML). The time queries at the PTB server are performed via WebSocket (WS), a supplement to the established Hypertext Transfer Protocol (HTTP) specified by the Internet Engineering Taskforce (IETF).
URL: https://uhr.ptb.de

RISE

The coded time information is referenced to UTC(SP) and generated by several NTP servers using the Network Time Protocol (NTP) for both IPv4 and IPv6.
Access host names: ntp1.sptime.se, ntp2.sptime.se, ntp3.sptime.se and ntp4.sptime.se

Speaking Clock
The speaking clock service is operated by Telia AB in Sweden.
The time announcement is referenced to UTC(SP) and disseminated from a computer-based system operated and maintained at RISE.
Access phone number : 90510 (only accessible in Sweden).
Access phone number : +4633 90510 (from outside Sweden).

More information about these services are found on the web site www.ri.se

ROA (1)

Telephone Code
The coded time information is referenced to UTC(ROA) and generated by a TUG type time code generator using an ASCII-character code. The time protocols are sent in a common format, the "European Telephone Time Code". Access phone number : +34 956 599 429

Network Time Protocol
More information is available from the ROA web site at www.roa.es
Host names of the servers:
hora.roa.es
minuto.roa.es

SG

Network Time Service (NeTS)
Transmit digital time code via the Internet using three protocols - Time Protocol, Daytime Protocol and Network Time Protocol.
Operate one time server at domain name: nets.org.sg

Automated Computer Time Service (ACTS)
Transmit digital time code (NIST format) via telephone modem for setting time in computers. The coded time information is referenced to UTC(SG).
Include provision for correcting telephone time delay.
Access phone number: +65 67799978.

SIQ

Internet Time Service (Network Time Protocol)
One server referenced to UTC(SIQ) provides Network Time Protocol (NTP) time code across the internet.
There is free access to the server for all users.
The server host names are: ntp.siq.si or time.siq.si
(two URL's for the same server; IP: 153.5.147.30)
New IP for NTP server on new location

SL

Network Time Service
Computers connected to the Internet can be synchronized to UTC(SL)
Using the NTP protocol using NTP Time Server at http://www.sltime.org.
For more information please visit http://www.sltime.org and http://www.measurementsdept.gov.lk or contact through email; adelec@measurementsdept.gov.lk.

(1) Information based on the Annual Report 2019, not confirmed by the Laboratory.

SMD	Network Time Service Disseminate time, UTC(SMD), through NTP protocol. URL's: ntp1.economie.fgov.be ntp2.economie.fgov..be ntp3.economie.fgov.be. All users have free access.
SNSU-BSN	Network Time Service The NTP time information referenced to UTC(IDN) is generated by Stratum-1 NTP server at URL: ntp.bsn.go.id Access Policy : free
TL	Speaking Clock Service Traceable to UTC(TL). Broadcast through PSTN (Public Switching Telephone Network) automatically and provides an accurate voice time signal to public users. Local access phone number: 117. The Computer Time Service Provides ASCII time code by telephone modem for setting time in computers. Access phone number: +886 3 4245117. NTP Service TL operates the network time service using the "Network Time Protocol" (NTP). Host name of the server: time.stdtime.gov.tw, further information in http://www.stdtime.gov.tw/english/e-home.aspx
TP	Internet Time Service UFE operates time servers directly referenced to UTC(TP). Time information is accessible through Network Time Protocol (NTP). Server host name: ntp2.ufe.cz More information at http://www.ufe.cz/
UME	Network Time Service UME operates an NTP server referenced to UTC(UME). Server Host Name: time.ume.tubitak.gov.tr
USNO (1)	Telephone Voice Announcer +1 202 762-1401 Backup voice announcer: +1 719 567-6742 Backup voice announcer: +1 202-762-1069 GPS via subframe 4 page 18 of the GPS broadcast navigation message Web site for time and for data files: https://www.usno.navy.mil/USNO/time Network Time Protocol (NTP) see https://www.usno.navy.mil/USNO/time/ntp for software and site closest to you.
VMI	Network Time Service VMI operates one time server Stratum 1 using the Network Time Protocol (NTP). For information on access to the website, please contact phuongtv@vmi.gov.vn. The server host name is: http://standardtime.vmi.gov.vn/ or IP: 113.160.59.166 port 123

(1) Information based on the Annual Report 2019, not confirmed by the Laboratory.

VNIIFTRI	Internet Time Service VNIIFTRI operates eight time servers Stratum 1 and one time server Stratum 2 using the “Network Time Protocol” (NTP). The server host names are: ntp1.vniiftri.ru (Stratum 1) ntp2.vniiftri.ru (Stratum 1) ntp3.vniiftri.ru (Stratum 1) ntp4.vniiftri.ru (Stratum 1) ntp1. niiftri.irkutsk.ru (Stratum 1) ntp2. niiftri.irkutsk.ru (Stratum 1) vniiftri.khv.ru (Stratum 1) vniiftri2.khv.ru (Stratum 1) ntp21.vniiftri.ru (Stratum 2).
VSL	Internet Time Service VSL operates a time server directly referenced to UTC(VSL). Time information is accessible through Network Time Protocol (NTP). The URLs for the NTP server are: ntp.vsl.nl ntp1.vsl.nl ntp2.vsl.nl