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EPN WEBSITE

The EPN website is maintained by the EPN Central Bureau; it offers a gateway to all the EPN data, products and auxiliary information: <http://epncb.eu/>

EUREF EMAIL LIST

Important EPN and EUREF announcements archived at http://epncb.eu/_newseventslinks/mails.php

To subscribe, send email to epncb@oma.be

EPN GUIDELINES

Reference documents describing guidelines for EPN operations.

Available from http://epncb.eu/_documentation/guidelines/

EUREF CONTACTS

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EUREF

<http://www.euref.eu/>

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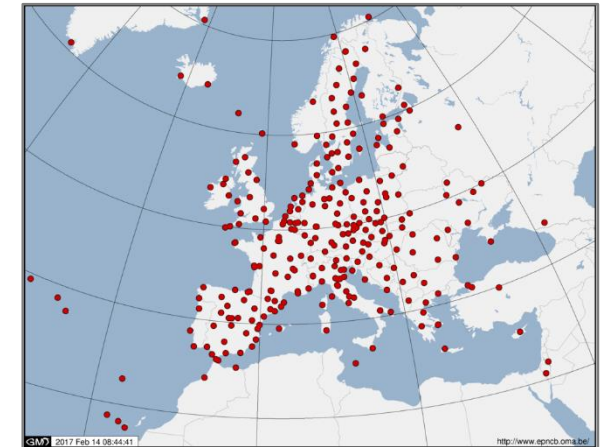


International Association of Geodesy
IAG

<http://www.iag-aig.org/>

EPN - THE EUREF PERMANENT GNSS NETWORK

*Permanent GNSS stations
providing fundamental
geodetic measurements for
Earth science applications
in Europe*



EPN – QUICK

REFERENCE CARD

This reference card provides information on accessing EPN data and products, email lists and guidelines. Please direct questions to the EPN Central Bureau:

Royal Observatory of Belgium
Av. Circulaire 3, B-1180 Brussels, Belgium
Email: epncb@oma.be, Url: <http://epncb.eu/>
Phone: +32 (0)2-373.02.92, Fax : +32 (0)2-374.98.22

IAG SUB-COMMISSION EUREF

The **IAG Sub-commission EUREF** is responsible for the maintenance of the European Terrestrial Reference System (**ETRS89**). Check the EUREF web site: <http://www.euref.eu/>

THE EUREF PERMANENT NETWORK - EPN

The **EUREF Permanent Network (EPN)** is a science-driven network of permanent **GNSS tracking stations** whose weekly computed positions are used by EUREF to realize the European Terrestrial Reference System (ETRS89). As an integral part of INSPIRE, this reference system forms the **backbone for all geographic and geodetic projects on the European territory** both on a national as on an international level. The EPN is also valuable for scientific applications such as geodynamics, sea level monitoring and weather prediction.

Almost 300 EPN stations, distributed all over Europe, provide in **near real-time and real-time high quality GNSS data** archived at local and regional data centres.

EPN analysis centres **routinely analyse the data** from this network and deliver to the GNSS community **precise coordinates for all stations** involved in the network.

The EPN tracking stations are integrated in the successive realizations of the **International Terrestrial Reference System**, which is the basis for the European Reference System.

Since the EPN is the European densification of the International GNSS network IGS (<http://igsceb.jpl.nasa.gov/>), a complete harmonization of **standards** between the global and European network is put forward.

EPN GNSS TRACKING DATA

For EPN station information, please see:

http://epncb.eu/_networkdata/stationlist.php

Observation, navigation and meteorological data files (hourly, daily and high-rate 15-minute)

Format: RINEX V2.11 and RINEX3.02 or 3.03

Defined at:

<ftp://igsceb.jpl.nasa.gov/igsceb/data/format/rinex211.txt>

<ftp://igsceb.jpl.nasa.gov/igsceb/data/format/rinex302.pdf>

<ftp://igsceb.jpl.nasa.gov/igsceb/data/format/rinex303.pdf>

Compression: Hatanaka

Translators at: <http://terras.gsi.go.jp/ja/crx2rxn.html>

Sampling: 30-sec for hourly and daily, 1-sec for 15-minute

EPN regional data centres:

<ftp://igs.bkg.bund.de/EUREF/>

<ftp://gnss.bev.gv.at/pub/>

<ftp://ftp.pecny.cz/LDC/nrtdata/> (only hourly data)

EPN local data centres:

<ftp://geodaf.mt.asi.it/GEOD/GPSD/RINEX>

<ftp://rgpdata.ign.fr/pub/data/>

<ftp://gnss1.tudelft.nl/rinex>

<ftp://gnss.be/gnss/data/rinex/daily>

<ftp://ftp.geodesia.ign.es/euref>

EPN historical data centre:

<ftp://ftp.epncb.eu/pub/obs>

Real-time observation data

Format: RTCM: <http://www.rtcn.org/>

Available from: <http://www.euref-ip.net/> (Germany),

<http://www.euref-ip.be> (Belgium),

<http://euref-ip.asi.it/> (Italy)

Client software/utilities:

<http://igs.bkg.bund.de/ntrip/download>

Further data access information

http://epncb.eu/_networkdata/data_access/

Joining the EPN

http://epncb.eu/_documentation/guidelines/procedure_becoming_station.pdf

EPN PRODUCTS

ITRS/ETRS89 station positions and velocities

Available from:

http://epncb.eu/_productsservices/coordinates/

IERS positions/velocities:

<http://itrf.ensg.ign.fr/> and <http://etrs89.ensg.ign.fr/>

Tropospheric zenith path delays

Format: SINEX_TRO

Defined at:

ftp://igsceb.jpl.nasa.gov/igsceb/data/format/sinex_tropo.txt

Available from: <ftp://igs.bkg.bund.de/EUREF/products/>

Real-time satellite orbit & clock corrections

Description: <http://epncb.eu>

[_productsservices/realtimecorrections/](http://epncb.eu/_productsservices/realtimecorrections/)

Based on products of the EPN analysis centres

- Agenzia Spaziale Italiana, Italy
- Kommission für Erdmessung und Glaziologie, Germany
- Bundesamt für Kartographie und Geodäsie, Germany
- Centre for Orbit Determination in Europe, Astronomical Institute of the University of Bern, Switzerland
- Geodetic Observatory Pecny, Czech Republic
- Instituto Geográfico Nacional de España, Spain
- Institut Géographique National, France
- Swisstopo, Switzerland
- Military University of Technology, Poland
- Nordic Geodetic Commission, Lantmäteriet and Onsala Space Observatory, Sweden
- Institute for Space Research, Austria
- Republic Geodetic Authority and University of Belgrade, Serbia
- Royal Observatory of Belgium, Belgium
- BFKH FTFF Satellite Geodetic Observatory - Hungary
- Slovak University of Technology, Slovakia
- University of Padova, Italy
- Warsaw University of Technology, Poland

and the EPN combination centre

Military University of Technology and Warsaw University of Technology, Poland