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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.oma.be/

EUREF EMAIL LIST
Important EPN and EUREF announcements archived at https://epncb.oma.be/ftp/mail/EUREF/
To subscribe, send email to epncb@oma.be

EPN GUIDELINES
Reference documents describing guidelines for EPN operations.
Available from https://epncb.oma.be/_documentation/guidelines/

EUREF CONTACTS
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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

Last revised February 11, 2022
**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: https://epncb.oma.be/  
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.

More than 370 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 (https://igs.org/), a complete harmonization of standards between the global and European network is put forward.

**EPN GNSS TRACKING DATA**

For EPN station information, please see:  
https://epncb.oma.be/_networkdata/stationlist.php

**Observation, navigation and meteorological data files** (hourly, daily and high-rate 15-minute)  
**Format:** RINEX V2.11 and RINEX3.02, 3.03, 3.04 or 3.05

**Defined at:**  
https://epncb.oma.be/_documentation/formats/rinex.php  
**Compression:** Hatanaka

**Translators at:** http://terras.gsi.go.jp/ja/crx2rmx.html

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

**EPN regional data centres:**  
https://igs.bkg.bund.de/root_ftp/EUREF/  
https://gnss.be/gnss/data/daily  
ftp://ftp.pecny.cz/LDC/nrtdata/ (only hourly data)

**EPN local data centres:**  
ftp://geodaf.mt.asi.it/GEOD/GPXD/RINEX/  
ftp://rpgdata.ign.fr/pub/data  
ftp://gnss1.tudelft.nl/rinex/  
ftp://gnss.be/gnss/data/rinex/daily/  
https://datos-geodesia.ign.es/euref/

**EPN historical data centre:**  

**Real-time observation data**

**Format:** RTCM: http://www.rtcm.org

Available from:  
http://www.euref-ip.net (Germany),  
http://www.euref-ip.be (Belgium),  
http://euref-ip.asi.it:2101 (Italy)

**Client software/utilities:**  
https://igs.bkg.bund.de/ntrip/download/

**Further data access information**  
https://epncb.oma.be/_networkdata/data_access/

**Joining the EPN**  
https://epncb.oma.be/_documentation/guidelines/procedure_becoming_station.pdf

**EPN PRODUCTS**

**ITRS/ETRS89 station positions and velocities**  
Available from:  
https://epncb.oma.be/_productservices/coordinates/  
IERS positions/velocities:  

**Tropospheric zenith path delays**  
**Format:** SINEX_TRO

**Defined at:**  
https://files.igs.org/pub/data/format/sinex_tropo.txt

**Available from:**  
https://igs.bkg.bund.de/root_ftp/EUREF/products/

**Real-time satellite orbit & clock corrections**

**Description:**

https://epncb.oma.be/_productservices/realtimecorrections

**Based on products of the EPN analysis centres**

– Agenzia Spaziale Italiana, Italy  
– Bavarian Academy of Sciences and Humanities, Germany  
– Bundesamt für Kartographie und Geodäsie, Germany  
– Centre for Orbit Determination in Europe, Astronomical Institute of the University of Bern, Switzerland  
– Instituto Geográfico Nacional de España, Spain  
– Institut Géographique National, France  
– Swissetop, Switzerland  
– Military University of Technology, Poland  
– Nordic Geodetic Commission, Lantmäteriet and Onsala Space Observatory, Sweden  
– Federal Office of Metrology and Surveyin, Austria  
– Republic Geodetic Authority and University of Belgrade, Serbia  
– Royal Observatory of Belgium, Belgium  
– Lechner Non-profit Ltd., 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