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## EPN CONTACTS

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**Time Series Analysis:** Ambrus Kenyeres,  
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## EPN WEBSITE

The EPN web site is maintained by the EPN Central Bureau ; it offers a gateway to all the EPN data, products and auxiliary information:

<http://epncb.oma.be/>

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## EUREF EMAIL LIST

**Important EPN and EUREF announcements** archived at [http://epncb.oma.be/\\_newsmails/](http://epncb.oma.be/_newsmails/)

To subscribe, send email to [epncb@oma.be](mailto:epncb@oma.be)

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## EPN GUIDELINES

Reference documents describing guidelines for EPN operations.

**Available from**

[http://epncb.oma.be/\\_organisation/guidelines/](http://epncb.oma.be/_organisation/guidelines/)

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## EUREF CONTACTS

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**Chair EUREF Technical Working Group:** Carine Bruyninx, [C.Bruyninx@oma.be](mailto:C.Bruyninx@oma.be)



EUREF

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International Association of Geodesy  
IAG

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

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# EPN - THE EUREF PERMANENT GNSS NETWORK

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



# EPN - QUICK REFERENCE CARD

## IAG SUBCOMMISSION EUREF

The **IAG Subcommittee 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. Supported by **EuroGeographics**, 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 200 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 GNSS EUREF network is the European densification of the International GNSS network IGS (<http://igscb.jpl.nasa.gov/>), a complete harmonization of **standards** between the global and European network is put forward.

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

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Av. Circulaire, 3  
B-1180 Brussels  
Belgium

Email: [epncb@oma.be](mailto:epncb@oma.be)  
Url: <http://epncb.oma.be/>

Phone: +32 (0)2-373.02.92, Fax : +32 (0)2-374.98.22

## EPN TRACKING STATION DATA

**For EPN station information, please see:**

[http://epncb.oma.be/\\_trackingnetwork/](http://epncb.oma.be/_trackingnetwork/)

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

**Format:** RINEX V2.11

**Defined at:**

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

**Compression:** Hatanaka

**Translators at:** <ftp://terras.gsi.go.jp/software/>

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

**EPN regional data centre locations:**

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

<ftp://olggps.oeaw.ac.at/pub/>

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

**EPN local data centre locations:**

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

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

[ftp://gps.oma.be/gps\\_rob/data/rinex/](ftp://gps.oma.be/gps_rob/data/rinex/)

### Real-time observation data

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

**Available from:** <http://www.euref-ip.net/>

**Client software/utilities:**

[http://igs.bkg.bund.de/index\\_ntrip.htm](http://igs.bkg.bund.de/index_ntrip.htm)

### Further data access information

[http://epncb.oma.be/\\_dataproduts/data\\_access/](http://epncb.oma.be/_dataproduts/data_access/)

### Joining the EPN

[http://epncb.oma.be/\\_organisation/guidelines/procedure\\_becoming\\_station.pdf](http://epncb.oma.be/_organisation/guidelines/procedure_becoming_station.pdf)

## EPN PRODUCTS

### ITRS/ETRS89 station positions and velocities

**Available from:**

[http://epncb.oma.be/\\_trackingnetwork/coordinates/](http://epncb.oma.be/_trackingnetwork/coordinates/)

**IERS positions/velocities:**

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

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

**Weekly SINEX:**

<ftp://epncb.oma.be/epncb/product/combin/>

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

### Tropospheric zenith path delays

**Format:** SINEX\_TRO

**Defined at:**

[ftp://epncb.oma.be/pub/data/format/sinex\\_tropo.txt](ftp://epncb.oma.be/pub/data/format/sinex_tropo.txt)

**Data centre product locations:**

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

### Time series analysis

**Available from:**

[http://epncb.oma.be/\\_dataproduts/products/timeseries/analysis/](http://epncb.oma.be/_dataproduts/products/timeseries/analysis/)

### Based on products of the EPN analysis centres

- Agenzia Spaziale Italiana, Centro di Geodesia Spaziale G. Colombo, Matera, Italy
  - Bayerische Kommission für die Internationale Erdmessung, Munich, Germany
  - Bundesamt für Kartographie und Geodäsie, Frankfurt, Germany
  - Centre for Orbit Determination in Europe, Astronomical Institute of the University of Bern, Switzerland
  - Delft Institute for Earth-Oriented Space Research, Netherlands
  - Geodetic Observatory Pecny, Czech Republic
  - Instituto Geográfico Nacional de España, Spain
  - Institut Géographique National, France
  - Bundesamt für Landestopographie Swisstopo, Wabern, Switzerland
  - Nordic Geodetic Commission, Lantmäteriet and Onsala Space Observatory, Sweden
  - Institute for Space Research, Graz, Austria
  - Royal Observatory of Belgium, Brussels, Belgium
  - FOMI Satellite Geodetic Observatory, Hungary
  - Slovak University of Technology, Bratislava, Slovakia
  - University of Padova, Italy
  - Warsaw University of Technology, Warsaw, Poland
- and the EPN combination centre**  
Bundesamt für Kartographie und Geodäsie, Germany