

PROCEDURE FOR BECOMING AN EPN STATION

*EPN Central Bureau
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Changes

- May 8, 2019 Update links and introduce M³G.
- Jan 20, 2017 Use igs14.atx instead of igs08.atx.
- Dec. 18, 2013 Added http://offiler.demon.co.uk/~dave/gwv/gwv_list.cgi for checking multiple station 4-char IDs
- Jan. 17, 2013
 - Added <http://facility.unavco.org/data/gnss/sitecheck.php> for checking multiple station 4-char IDs
 - Updated revisited links
 - Clarifications in "Steps to be followed"
- Dec. 5, 2011 Candidate EPN stations must provide information on the national ETRS89 coordinates of the station
- Dec. 5, 2006 New EPN stations must have an antenna/radome with known absolute calibrations
Reflect new data flow.
- Sep. 08, 2004 Update "Procedure Summary"
- Dec. 01, 2003 Major document revision to reflect the current procedure used at EPN CB
- Apr. 22, 2002 IGS stations in Europe no longer automatically part of EPN
- Nov. 24, 2000 Update "Data Format, Flow and Archive"

This document describes the procedure to be followed by GNSS stations in order to be included in the EUREF Permanent Network (EPN). It is applicable to European GNSS stations of regional interest, and includes detailed steps to be taken by the responsible agency, in consultation with the EPN Central Bureau.

In addition to this document, candidate EPN stations should consult the "Guidelines for EPN Stations and Operational Centres" (http://epncb.oma.be/documentation/guidelines/guidelines_station_operationalcentre.pdf) in order to comply with the detailed station requirements with respect to monumentation, receiver, antenna, data handling, documentation, and data formats as described in this document.

GNSS stations wishing to join also the IGS network need to solicit separately their inclusion into this network (see "IGS New Site Checklist" at <http://kb.igs.org/hc/en-us/articles/202014573-New-Site-Checklist>).

Prior to the station installation is it recommended to follow the "Monumentation Design and Implementation Recommendations" (<http://kb.igs.org/hc/en-us/articles/202094816-Monumentation-Recommendations>) issued by the IGS.

All electronic messages, unless otherwise specified, should be sent to the EPN Central Bureau (CB) at epncb@oma.be.

1. Make sure the station complies with the **Requirements for Permanent Stations** in the document "Guidelines for EPN Stations and Operational Centres"
http://epncb.oma.be/documentation/guidelines/guidelines_station_operationalcentre.pdf
Pay especially attention to guidelines specifically for new stations.
2. Make sure you, or an associated agency, are capable of filling the **Requirements for Operational Centres** in the document "Guidelines for EPN Stations and Operational Centres"
http://epncb.oma.be/documentation/guidelines/guidelines_station_operationalcentre.pdf
3. Choose the **station 4-character identification code**:
All EPN stations are uniquely identified using a four-character abbreviation code. Consequently, choosing this code is the first step. It will be used for all future reference to your station (data and documentation).
To prevent duplication, check for already used station abbreviations at
<http://sopac.ucsd.edu/checkSiteID.shtml>
<https://gnss-metadata.eu/site/stations>
<ftp://igs-rf.ign.fr/pub/DOMES/codomes.snx>
4. **Request a DOMES number** for your station/marker from the International Earth Rotation and Reference Systems Service (IERS): http://itrf.ensg.ign.fr/domes_request.php.
5. **Send a letter** to the
EPN Central Bureau
Dr. Carine Bruyninx
Avenue Circulaire, 3
B-1180 Brussels
Belgium

stating the **long-term commitment** (at least 5 years) to operate the station following EPN Guidelines. Describe

- The chosen station 4-character identification code, the a priori station coordinates and station location compared to other EPN stations,
- The collocated instruments (tide gauge, meteo sensor, seismometer, gravity,...)
- The connection to the national levelling network and UELN
- The availability of national official ETRS89 coordinates (if available and if used for national reference frame densifications) of the station. Provide the station name and DOMES number, X-Y-Z coordinates, frame, epoch and the time since when these coordinates were used. Specify also the responsible agency and persons (e-mail) maintaining the national ETRS89 coordinates.
- The receiver and antenna/radome type using standard names from ftp://epncb.oma.be/pub/station/general/rcvr_ant.tab. Indicate which GNSS constellations the receiver is tracking and if individual antenna/radome calibrations are available. If not, a type mean elevation and azimuth dependent absolute (ROBOT) calibration from the IGS should be available in <ftp://igs.org/pub/station/general/igs14.atx>.
- The planned data flow (primary and secondary Data Centre) for daily, hourly as well as real-time streams as well as the responsible Operational Centre
- The station installation date and availability of historical data.
- The name of the Parent/Funding Organization, name and title of the Authorizing Official, name and title of the Primary Point of Contact, mailing address and phone/fax/e-mail should be included.

- The letter should be signed both by the Authorizing Official committing the organization/institution to the EPN and the Primary Point of Contact involved.

A draft letter is available from

<http://epncb.oma.be/documentation/guidelines/commitment.doc>

After reception of the letter, the EPN CB will propose the station to the EPN Coordination Group (CG) for inclusion in the EPN. As soon as the CG has made a decision, the EPN CB will inform the station Primary Point of Contact if the procedure can be continued.

The status of the inclusion of the station into the EPN will be shown at

<http://epncb.oma.be/networkdata/proposed.php>.

6. If available, send the **individual antenna calibration** values (in ANTEX format) for the antenna/radome installed at your station to the EPN CB.
7. Check/Update the **agency information** at the EPN CB
Log in to M³G <https://gnss-metadata.eu/> (Login ID=the abbreviation of your agency name) and check/update the “User Agency” information and the “Associated Agency” information (in case other agencies are involved in the operation of the new station).
8. Upload the station **site log** to the EPN CB
Log in to M³G <https://gnss-metadata.eu/>, add the new station to your network, provide station information, and propose the station to the EPN. Then, complete the station site log including the full observation history of the station/marker. Finally, validate and submit the station site log.
Instructions are available from ftp://epncb.oma.be/pub/station/general/sitelog_instr.txt and <https://gnss-metadata.eu/site/faq>.
Examples of site logs can be retrieved from in <ftp://epncb.oma.be/pub/station/log/>.
9. Upload **digital station pictures**
Use the EPN CB station picture submission tool <http://epncb.oma.be/networkdata/sitepicturesubmission/> to upload station pictures of the antenna installation in the 4 cardinal directions (clearly labelled) or from relevant monuments, markers or collocated instruments.
10. Subscribe to **EUREF Mail**
(instructions at <http://epncb.oma.be/newseventslinks/EUREFmail/>).
11. Contact two EPN Data Centres to **start the daily and hourly data flow** (details in Section 3.2 “Format and Distribution of Hourly and Daily Data” of the document “Guidelines for EPN Stations and Operational Centres”
http://epncb.oma.be/documentation/guidelines/guidelines_station_operationalcentre.pdf.
In case the data are not directly uploaded to the two regional EPN Data Centres (BKG and BEV), make sure that at the end, all hourly and daily data end up at the two regional EPN Data Centres. Consult <ftp://epncb.oma.be/pub/station/general/Help4EPNDataUpload.pdf> for detailed instructions in case the data are directly uploaded to the two regional EPN Data Centres.
12. If applicable, contact the operator of each of the three EPN regional broadcasters (see http://epncb.oma.be/networkdata/data_access/real_time/broadcasters.php) to **start the real-time data flow**.

When the data quality, latency and consistency checks performed by the EPN CB are successful, the station will be designated to at least three EPN Analysis Centres.



The EPN CB will announce through EUREF mail the official integration of the station into the EPN.