



Federal Agency for
Cartography and Geodesy



EUREF Products and Services

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- **Action Item from last TWG was:**
- **“AI9 on ALL:**Review EUREF Products on the Web and provide feedback (Item 7). CB, EB and WS to work on the product catalogue.”




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Welcome to EUREF !

Our work is focused on:

- Definition, realization and maintenance of the European Geodetic Reference Systems;
- Promotion and assistance of the adoption and use of European Terrestrial Reference System (ETRS89) and European Vertical Reference System (EVRS) in our partner countries;
- Development and maintenance of the EUREF GNSS Permanent Network (EPN) which is the ground based GNSS infrastructure for scientific and practical applications in positioning and navigation (GGOS, IGS-RT);
- Development of strategies and technologies for the realization of geodetic reference systems.

EUREF provides all its products on the "best effort" basis and free of charge to the public.

Updated 2013.10.01

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EUREF works on several ongoing topics of European interest. These activities comprise scientific, technical as well as strategic questions. They cover for example

- Establishment of initiatives in the long-term,
- Development and use of new techniques for a limited time which may be migrated to routine operation,
- Projects launched for a dedicated action to be closed after successful determination or to a defined point in time.

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EUREF Products

The EUREF organization generates a set of products mainly to be used in geodesy but certainly also suitable for other tasks in the geo-referencing branch. This website holds a compilation of information about the products from EUREF projects and services.

Product classification: A terminology was setup to classify the various EUREF products. It consists of the important characteristics and of the potential quantities. It may help users to identify products they are interested in.

No.	Product	Class	Sub-Class	Accuracy	Latency	Updates
1	Definition of ETRS89	Reference Systems and Frames	Definition	1 cm	-	-

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	and EPN					
6	Weekly coordinates of EPN stations	Station	Coordinates	0.5 - 1.5 cm	3 weeks	weekly
7	Daily coordinates of EPN stations	Station	Coordinates	0.5 - 1.5 cm	3 weeks	daily
8	Rapid daily coordinates of EPN stations	Station	Coordinates	1 - 2 cm	1 day	daily
9	Hourly coordinates of EPN stations	Station	Coordinates	5 - 10 cm	1 hour	hourly

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	of EPN stations					
20	Daily observation files of EPN stations	Observation	Data File	-	30 min	daily
21	Weekly troposphere parameter for EPN stations	Station	Troposphere	-	3 weeks	hourly
22	GNSS satellite orbit correction	Satellite	Orbit	10 - 15 cm	real-time	10 sec.
23	GNSS satellite clock correction	Satellite	Clock	0.3 ns	real-time	10 sec.

(1) Accuracy of station coordinate at all epochs when applying the velocity.

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EUREF Services

EUREF-IP

GNSS real-time activities in EUREF have been developed under the synonym "EUREF-IP". EUREF started these activities in 2002 with the decision to set up a real-time GNSS infrastructure on the Internet using the EPN stations. "EUREF-IP" (IP for Internet Protocol) is based on a dissemination standard called "Networked Transport of RTCM via Internet Protocol" (Ntrip). Since 2007, real-time data streams are part of the EPN routine operations.

Recent activities cover the stable re-dissemination of GNSS real-time data and products using EPN resources and the processing and analysis of real-time GNSS data.

More details: http://www.epncb.oma.be/dataproducts/data_access/real_time/ and http://www.epncb.oma.be/organisation/projects/RT_analysis/index.php

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- **Re-vitalization of EUREF product catalogue?**
 - Implemented in reduced form at www.euref.eu/euref_pr.html
 - →Differentiation between products and services necessary?
- **Which products on regional rather than or additional to global level?**
 - Ionosphere parameters / maps
 - Ambiguity fixing parameters
 - User station coordinates
- **Do we have user statistics, user feedback? – Yes**
Do we need such? – Yes



Services at www.euref.eu/euref_serv.html

- 2 different services listed
 - Short or even no description
 - Link
- EUREF-IP -> was EPN Special Project -> operational since 2008 -> remove from here
- EUVN-DA -> was ??? -> closed? -> remove from here (find another place)