Quality Assurance of EPOS-GNSS data products provided by UBI

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The GNSS data products distributed by the GNSS Data and Products EPOS Thematic Core Service originate from the following analysis/combination centres:

INGV: Instituto Nazionale di Geofisica e Vulcanologia, Italy

LM: Lantmäteriet, Sweden

ROB: Royal Observatory of Belgium, Belgium

SGO: Satellite Geodetic Observatory, Hungary

UGA: Université Grenoble Alpes, France

WUT: Warsow University of Technology, Poland

Only these processing centres with a registered account are allowed to upload the GNSS data products associated with their agency.

The products provided by those Processing Centres are as follows:

Position Time Series				
Analysis Center		**Processing strategy** *Purpose & Usage*	**Stations & networks included** *Softwares* *Reference Frames*	**Updates** *DOI*
EPOS	**UGA-CNRS** (default)	**Double difference** *Internally consistent solution well-suited for geodynamic, tectonic, seismological studies.*	**All EPOS stations** GAMIT / GLOBK, pyacs *IGb14*	Day-25 Auto Day-2 Rapid *10.17178/GNSS.products.EPOS.2019*
	INGV	**Precise Point Positioning** *Internally consistent solution well-suited for geodynamic, tectonic, seismological studies.*	**All EPOS stations** GIPSY OASIS 6.4 *IGS14 & Europe alignment*	Yearly
EUREF	**ROB-EUREF**	**Multi-year solution based on EUREF combined daily positions** (provided by WUT-EUREF) *Designed for the maintenance of the European Terrestrial Reference System (ETRS89)*	**EPN stations** CATREF *IGb14*	15 weeks *10.24414/ROB-EUREF-CWWWW*
	WUT-EUREF	**Daily and Weekly combination based on double difference (mostly)** solutions provided by 16 EPN ACs. Used by ROB-EUREF for multi-year combination.	**EPN stations** Bernese, GAMIT/GLOBK, GIPSY *IGb14*	D-35
EUREF-EPOS	**SGO-EPND**	**Multi-year solution based on weekly combination of** 30 EPND & EPOS regional solutions	**EUREF densified including all EPOS stations** CATREF *IGb14*	yearly

Velocities				
EUREF-EPOS	**SGO-EPND** (default)	**Multi-year combination solution** *Densified solution well-suited for geodynamic and tectonic studies.*	**EUREF densified including all EPOS stations** CATREF / HECTOR *IGb14*	yearly
EPOS	**UGA-CNRS**	**Statistical Trend Estimation** *Internally consistent solution well-suited for geodynamic, tectonic, seismological studies.*	**All EPOS stations** MIDAS *IGb14*	yearly *10.17178/GNSS.products.EPOS.2019*
EPOS	**INGV**	**Statistical Trend Estimation** *Internally consistent solution well-suited for geodynamic, tectonic, seismological studies.*	**All EPOS stations** MIDAS *IGb14*	yearly
EUREF	**ROB-EUREF**	**Multi-year solution based on EUREF combined daily positions (**provided by WUT-EUREF) *Designed for the maintenance of the European Terrestrial Reference System (ETRS89)*	**EPN stations** CATREF *IGb14*	15 weeks *10.24414/ROB-EUREF-CWWWW*
Strain Rates				
EPOS	**LM**	**Strain rates on a regular grid** (Shen et al. 2015, Anastasiou et al. 2019) *This strain product can be used for geodynamic, tectonic, seismological studies.*	**All EPOS stations + EUREF densified** StrainWebTool	When new EUREF-EPOS solution is available *10.23701/sr.0001*

The GNSS products are uploaded using the GNSS international standards: 'PBO pos' and/or SINEX formats.

UBI **only accepts and distribute products data** that have passed the built-in UBI **validation rules**, such as:

- File names should comply with the agreed naming convention (as defined in EPOS-GNSS internal guidelines document)
- Complete and correct metadata information must be provided for each new upload, either in the SINEX header or in the PBO pos file headers.

If GNSS data products do not comply with these validation rules, UBI will request that the processing centre manager corrects the data. Once the GNSS data product have been corrected and validated by UBI, the analysis centre manager can submit them to UBI for insertion in the products portal database.