

National Report of PORTUGAL



Geodesy

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EUREF 2017, WROCLAW, Poland, May 17-19

ReNEP – Portuguese CORS Network



ReNEP

● DGT

● Partners



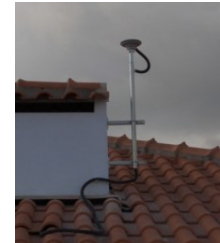
ReNEP – Portuguese CORS Network



48 Stations :

- 42 mainland
- 4 in Azores
- 2 in Madeira

➤ GPS & GLONASS



- RTK Network Coverage
- Continuous Streaming
- RTCM (Radio Technical Commission for Maritime Services) over NTRIP (Networked Transport of RTCM via Internet Protocol)
- Hourly RINEX files at 5 seconds observation rate

• Coordinate Systems:

- **Mainland:** ETRS89 at epoch 1995.4
- **Islands:** ITRF93 at epoch 1994.0



ReNEP – Products



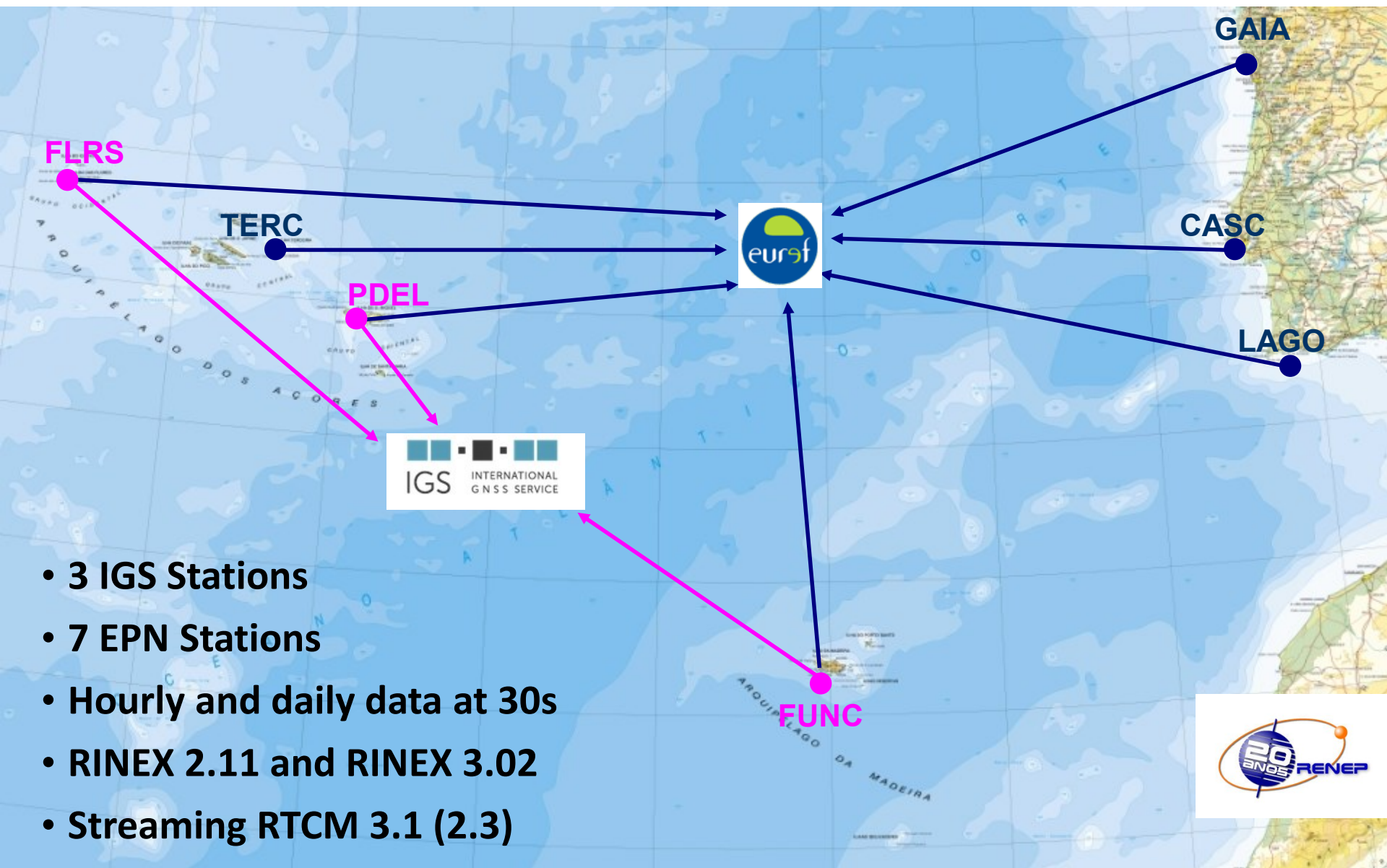
➤ **Post-processing:**

- Hourly files at 5s
- EPN Stations: hourly and daily files at 30s
- RINEX 2.11 format (<ftp.dgterritorio.pt>)

➤ **Real Time:**

- RTCM 3.1 (and 2.3) over NTRIP
- Frame: PT-TM06 (national realisation of ETRS89)
- Single Base Station, Nearest Site, Network
- [Free of charge](#)

ReNEP and Internacional Networks

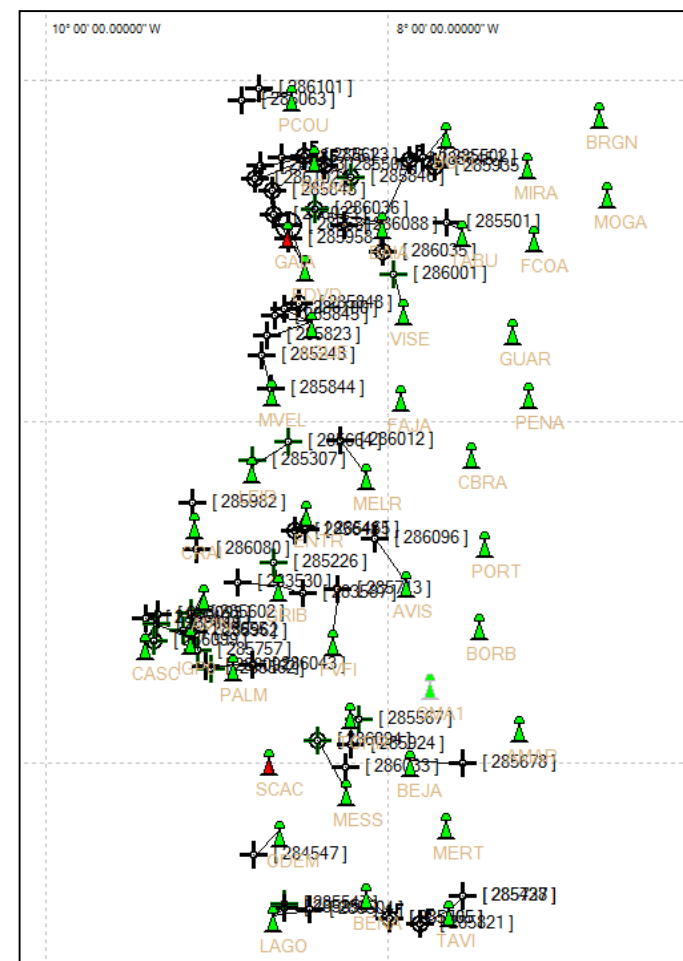
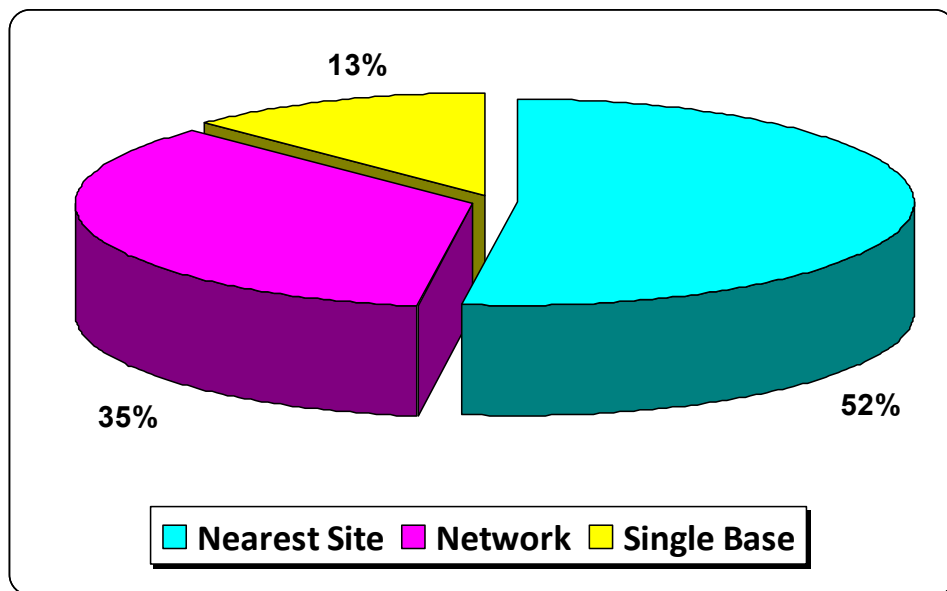


- 3 IGS Stations
- 7 EPN Stations
- Hourly and daily data at 30s
- RINEX 2.11 and RINEX 3.02
- Streaming RTCM 3.1 (2.3)

ReNEP – Users



- More then 2100 register users for RTK
- More then 40 000 connections monthly to our server



ReNEP – User Questionnaire



Purpose:

- Characterize network users
- Get to know the utility and quality of services provided
- Listen to user opinions and suggestions

Methodology

- The survey had 11 questions and was built with Google tools
- Sent by e-mail to all registered users.

Main conclusions:

Strength

- Technical support
- The good quality of the Network and the data
- Free of charge

Weakness

- Web portal for data update
- Technical assistance at weekends and holidays
- Website with network information

EUREF Web Page

<http://www.euref.eu>



The screenshot shows a web browser window with the address bar displaying 'http://www.euref.eu'. The website has a green header with the EUREF logo on the left and the IAG logo on the right. Below the header, there is a navigation menu with links: Home, Site Map, Data Protection, Legal & Privacy, and Contacts. The main content area is divided into two columns. The left column contains a vertical list of links: About EUREF, Technical Working Group, European Geodetic Reference Systems, EUREF Permanent Network, Products & Services, Symposia, Documentation & Guidelines, Links, and News. The right column features a 'Welcome to EUREF !' section followed by a list of four bullet points describing the organization's work: definition and maintenance of European Geodetic Reference Systems; promotion and assistance of the adoption and use of European Terrestrial Reference System (ETRS89) and European Vertical Reference System (EVRS); development and maintenance of the EUREF GNSS Permanent Network (EPN); and development of strategies and technologies for the realization of geodetic reference systems. Below this list, a statement reads: 'EUREF provides all its products on the "best effort" basis and free of charge to the public.' At the bottom of the main content area, it says 'Updated 2017.03.23'. The footer of the website includes a Google search bar, the text 'This page is hosted by Direção-Geral do Território', and the email address 'EurefMaster@dgterritorio.pt'.

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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 2017.03.23

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Symposia - Meetings, Presentations & Resolutions

San Sebastian, 25-27.05.2016	contributions available	Resolutions	see photo
Leipzig, 03-05.06.2015	contributions available	Resolutions	see photo
Vilnius, 04-06.06.2014	contributions available	Resolutions	see photo
Budapest, 29-31.05.2013	contribution		
Saint-Mandé, 06-08.06.2012	contribution		
Chisinau, 25-28.05.2011	contribution		
Gävle, 02-05.06.2010	contribution		
Florence, 27-30.05.2009	contribution		

Updated 2017.01.13

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euref symposia meetings x EUREF 2016 San Sebastian x
www.euref.eu/symposia/2016SanSebastian/Symposium2016-SanSebastian.html

 Reference Frame Sub Commission for Europe 

Report on the Symposium of the IAG Subcommittee for Europe (EUREF) held in San Sebastian, Spain, 25-27 May 2016

ETRS89, EVRS
Chairs: Zuheir Altamimi, Markku Poutanen

1.1 - European Contribution to the UN Initiative GGRF - The Global Geodetic Reference Frame M. Poutanen	click to see file 
1.2 - Key Results of ITRF2014 and Implication to ETRS89 Realization Z. Altamimi	click to see file 
1.3 - ITRF2014 Densification with EPN REPRO-2: First Experiences A. Kenyeres	click to see file 
1.4 - The NKG2008 GPS Campaign – Final Transformation Results and a New Common Nordic Reference Frame P. Hakli	click to see file 
1.5 - Towards a Standardized European Vertical Datum for Coastal Mapping B. Alberts	click to see file 
1.6 - The Role of Gravity and Height for the GGRF J. Ihde	click to see file 

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Geodesy 2020 is a vision for the national geodetic infrastructure for 2020, and was built by collaborative processes in a structured blue sky thinking session held on December 5, 2016 in the DGT.

The purpose was to define the guidelines for a national geodetic infrastructure that allow the production of reliable geographic information for the sustainable development of the national territory.

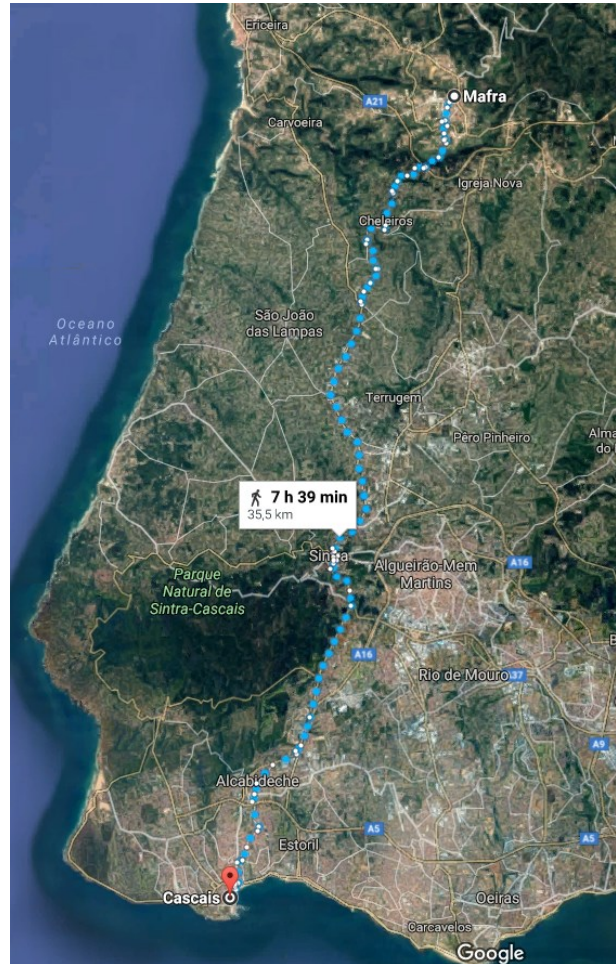
Future projects:

- **Study the feasibility of adopting a new realization of ETRS89, based on the ETRF2014.**
- **Work towards the establishment of a new vertical reference for mainland, linked to the official EUREF solution for EVRS2007 and based on new geodetic observations.**

We have to take into consideration that the adoption of a new ETRS89 realization and a new vertical reference has implications in the production of cartographic, so we need to be prepared to give support to the users in the transition period.

Levelling Network

Recognition and coordination
of levelling marks



From Cascais Tide Gauge to Mafra.



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Thank You

<ftp.dgterritorio.pt>



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