

National Report of PORTUGAL

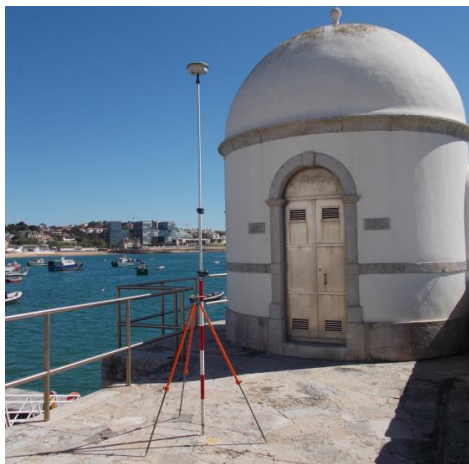
Department of Geodesy

Helena Ribeiro

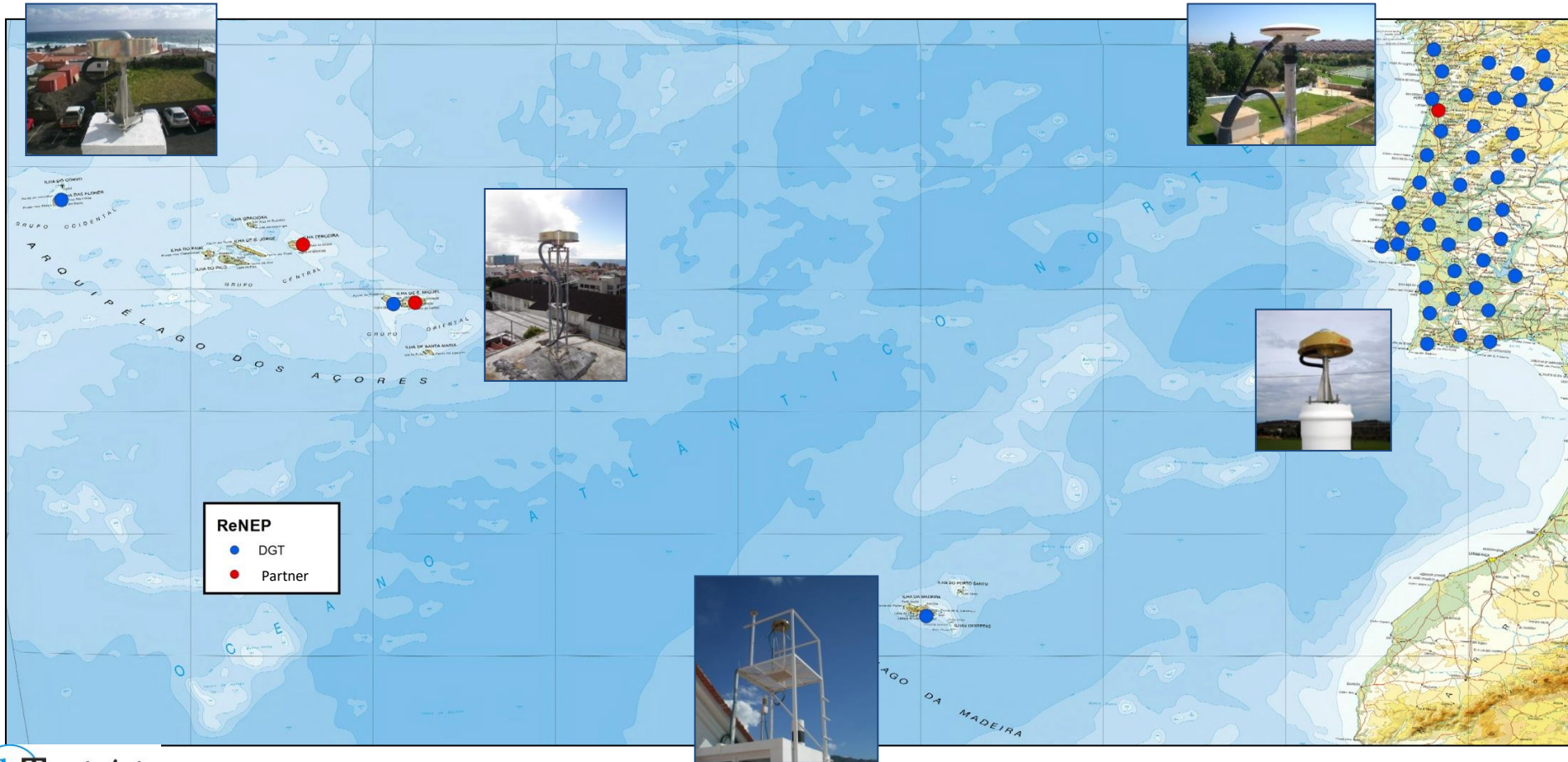
(hribeiro@dgterritorio.pt)

A. Bernardes

A. Medeiro



ReNEP – Portuguese CORS Network



ReNEP – Portuguese CORS Network



47 Stations:

- 42 mainland
- 4 in Azores
- 1 in Madeira

➤ GPS & GLONASS

➤ 14 Galileo

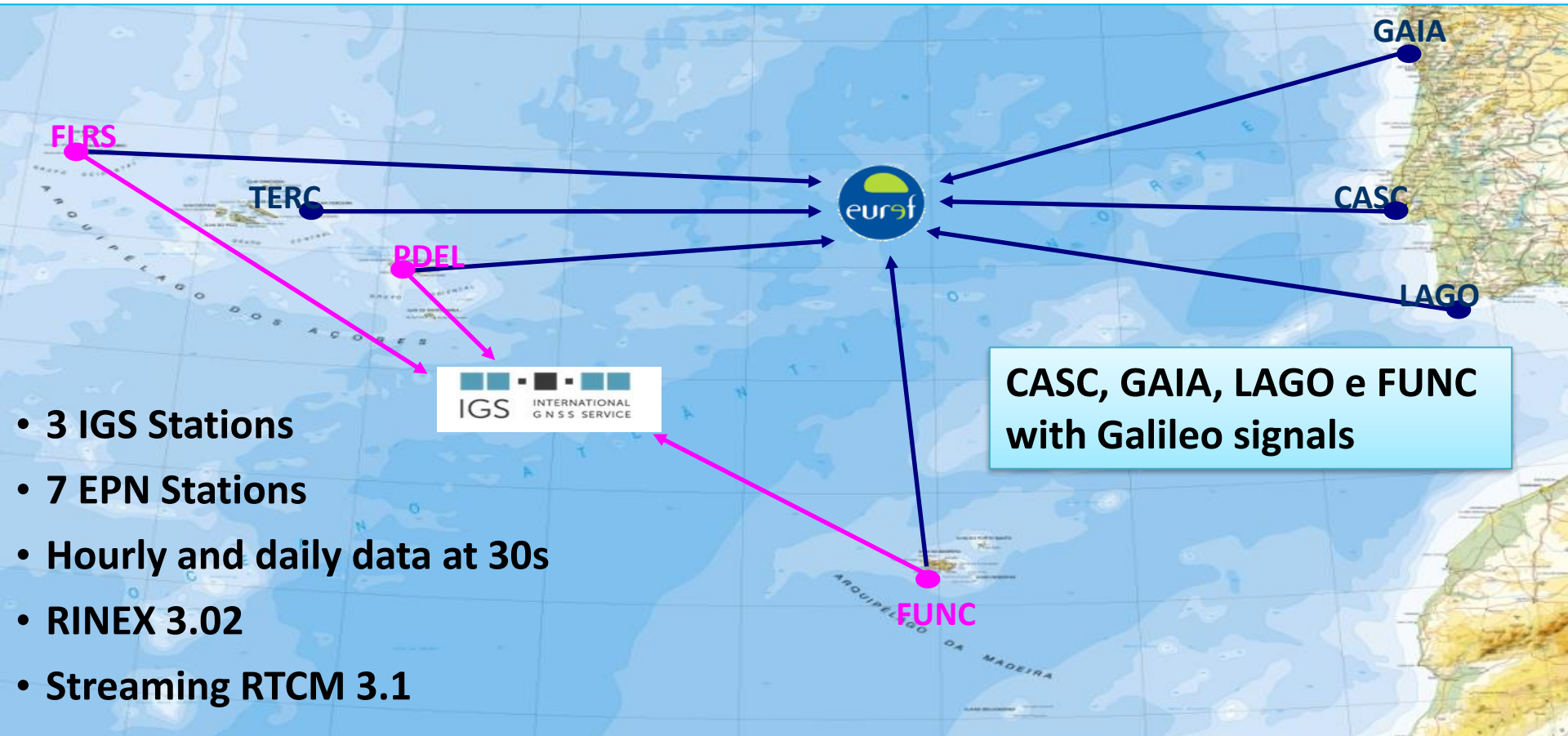


- RTK Network Coverage
- Continuous Streaming
- RTCM (Radio Technical Commission for Maritime Services) over NTRIP
- Hourly RINEX files at 5 seconds rate

• Coordinate Systems:

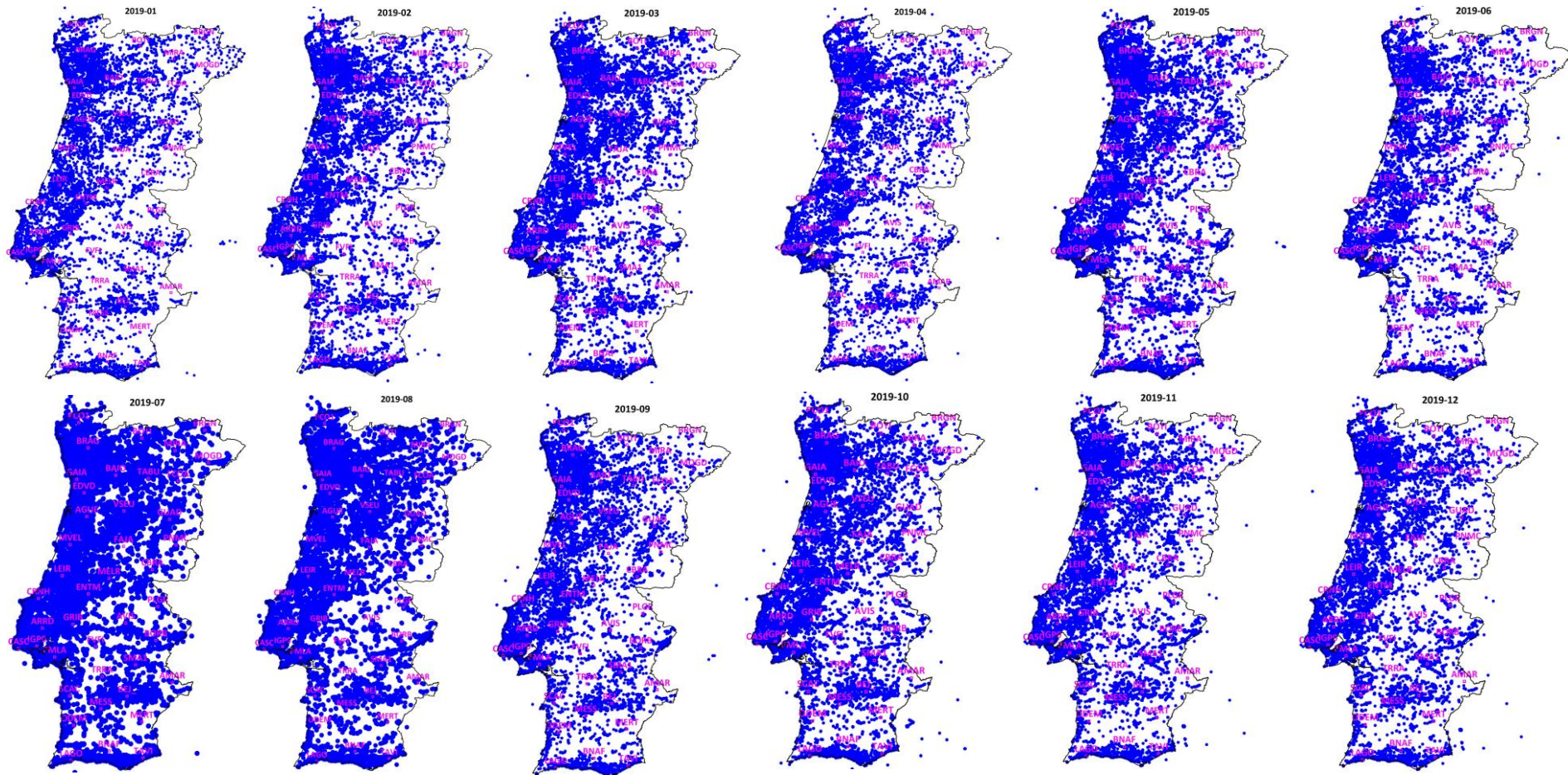
- Mainland: ETRF97 at epoch 1995.4
- Islands: ITRF93 at epoch 1994.0

ReNEP and Internacional Networks

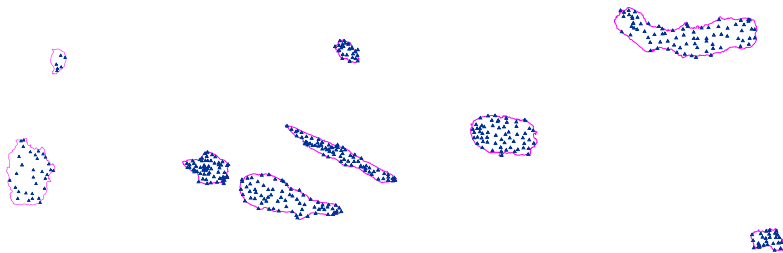


- 3 IGS Stations
- 7 EPN Stations
- Hourly and daily data at 30s
- RINEX 3.02
- Streaming RTCM 3.1

RTK Users - 2019



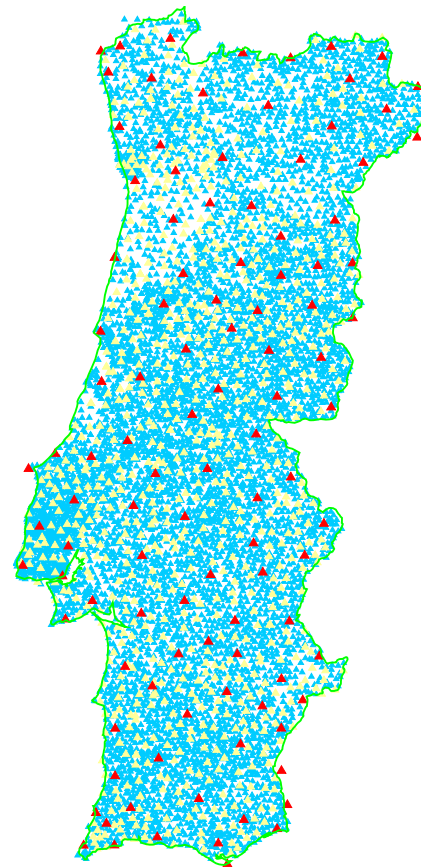
Geodetic Network



R. A. Açores: 523 VG



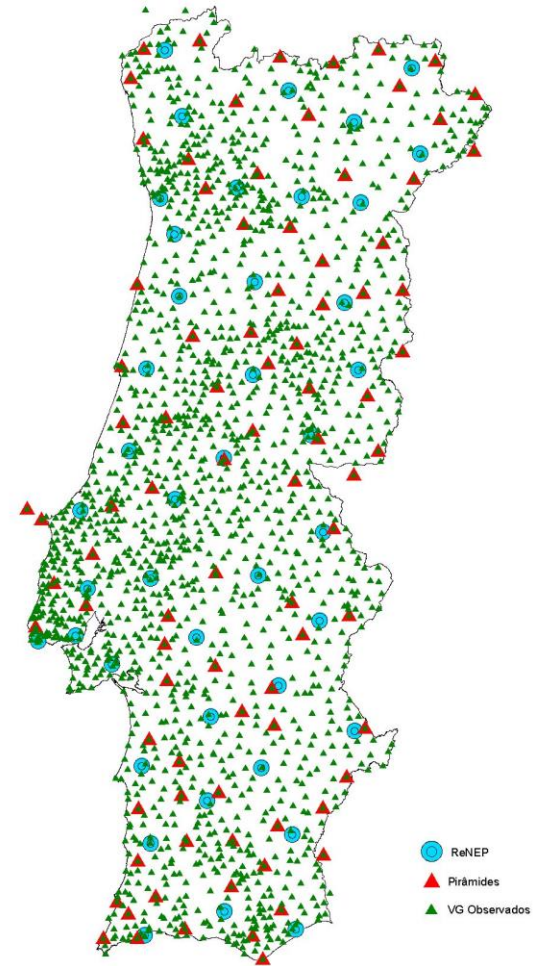
R. A. Madeira: 118 VG



Mainland: 7963 VG

Redefinition of the Geodetic Network for Mainland a study

- CORS Network- ReNEP: **41** Points
- Geodetic Network in the Mainland: **1987** trig points
(25% of the geodetic marks)



Total: 1987 VG

Maintenance of the Tide Gauges: Cascais e Lagos

- RADAR technology for water leveling sensors
- Real-time data logging and uploading data to DGT servers and other users
- Sensors for measuring water temperature, air temperature and pressure
- Power supply: solar panel

Radar sensor



Datalogger

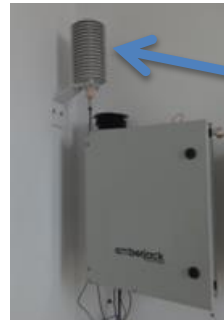


Pressure sensor

Solar Panel



air temperature sensor



Cascais

Real Time Sea level



SEA LEVEL STATION MONITORING FACILITY

[Intro](#)[Map](#)[Station lists](#)[Station details](#)[Services & FAQ](#)[GLOSS](#)[Catalog](#)[\[previous station\]](#)Station at GMT[\[next station\]](#)[\[more details\]](#)[\[show data\]](#)[\[show on map\]](#)[\[monitor\]](#)

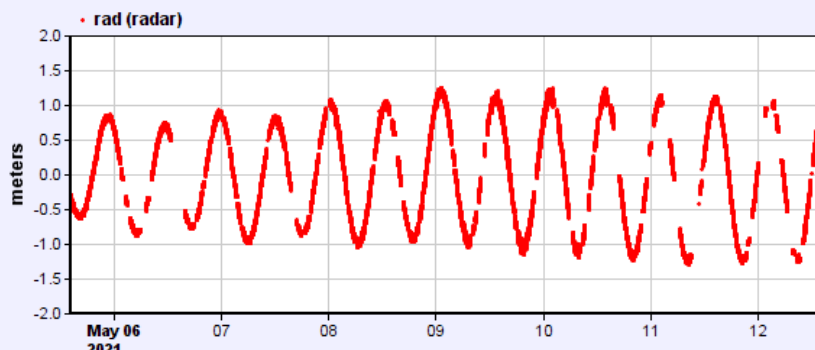
Station metadata

Code	casc
Country	Portugal
Location	Cascais
Status	Operational
Local Contact	Direção-Geral do Território (Portugal)
GLOSS ID	246 [goto handbook]
QC data	UHSLC 209 (1959-2005) PSMSL 2201 (1959-2005) PSMSL 52 (1882-1993)
Latitude	38.693158
Longitude	-9.415384
Connection	SOCKET

Sensor 1

Type of sensor	rad (radar)
Sampling rate (min)	0.0833

Sealevel at Cascais station (offset: 0.1688 m)



From 2021-05-05 14:28+00:00 to 2021-05-12 14:28+00:00

© IOC-VLIZ

Period

- ☐ 12h
☐ day
☒ 7 days
☐ 30 days

Signals

- ☐ Remove outliers
☐ Remove spikes

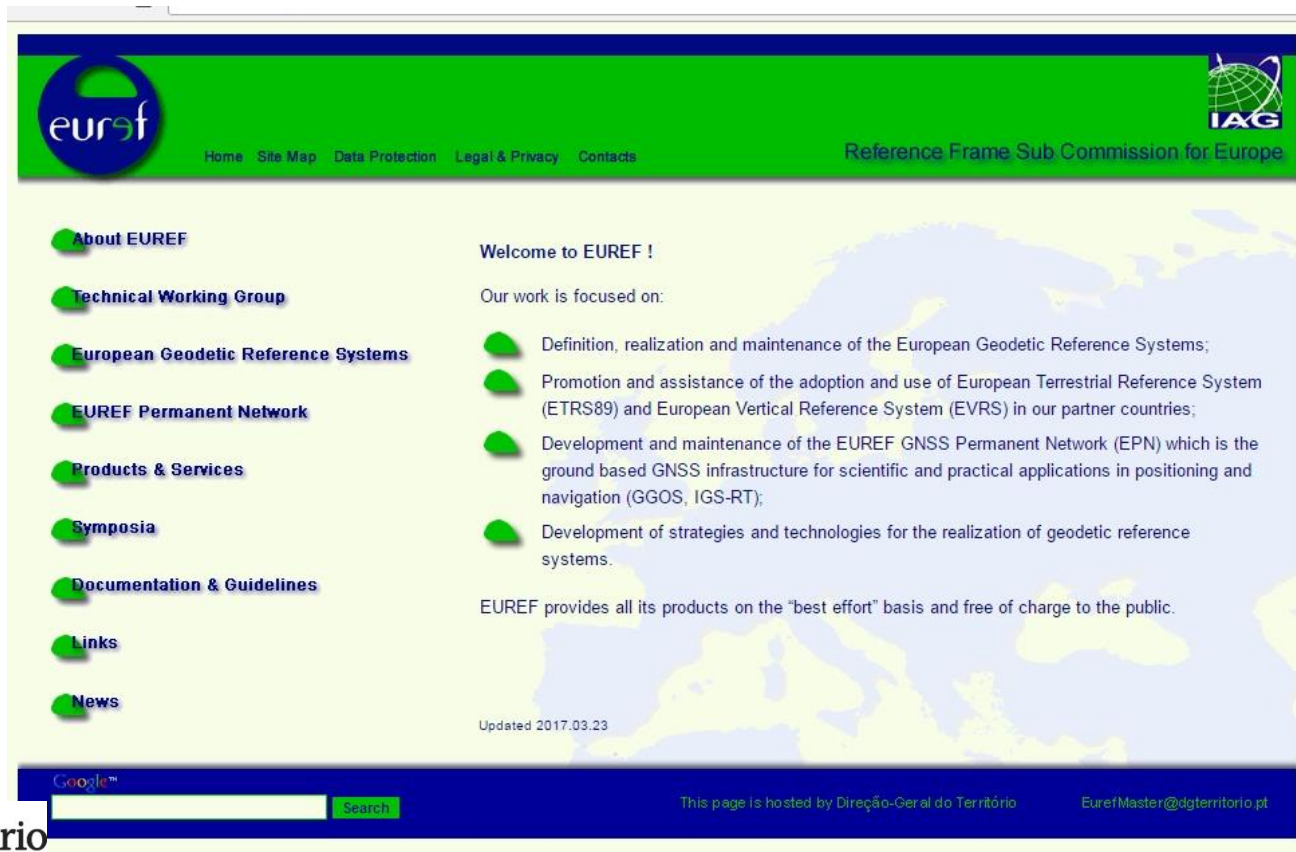
Data

- ☒ Relative levels= signal - average over selected period
☐ Absolute levels= as received
☐ Offset signals= relative signals + offset

Tip: use left icons to zoom & scroll

EUREF Web Page

<http://www.euref.eu>



The screenshot shows the EUREF website homepage. The header features the EUREF logo on the left and the IAG logo on the right, with the text "Reference Frame Sub Commission for Europe" below it. A navigation menu includes links for 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 contains a welcome message, a list of four bullet points describing EUREF's work, and a statement about providing products on a "best effort" basis. A background map of Europe is visible. The footer 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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About EUREF

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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

Google™ Search

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Domain Renewal:
29 abril 2024

Future projects:

- **New coordinates for the GNSS CORS based on the ITRF2014**
- **More ReNEP stations with Galileo tracking capabilities**