

National Report of PORTUGAL

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ReNEP – Portuguese CORS Network



RENEP - Rede Nacional de Estações Permanentes

Descrição

A RENEP é um serviço público de geo-posicionamento prestado pelo IGP que, no âmbito das suas atribuições de manutenção do Referencial Geodésico Nacional, disponibiliza aos utilizadores de equipamentos GPS dados que facultam a determinação de coordenadas geográficas com precisão melhor que 10 cm.

É constituída por Estações GPS/GNSS, de observação contínua, que difundem observações no Sistema de Referência ETRS89, para posicionamento em tempo-real, utilizando a técnica RTK, ou para pós-processamento com ficheiros RINEX.

Como utilizar

- Todos os dados são de distribuição gratuita.
- Para pós-processamento consulte o Arquivo RINEX.
- Para aceder ao serviço em tempo-real deve efectuar o [registo](#) como utilizador.

Arquivo RINEX

Arquivo RINEX						
IGP						
Maio 2009						
<=						=>
Dom	Seg	Ter	Qua	Qui	Sex	Sab
-	-	-	-	-	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	-	-	-	-	-	-

Selecione a EP e o dia pretendidos.
Cada ficheiro respeita ao período de 1 hora com intervalo entre observações de 5 segundos.

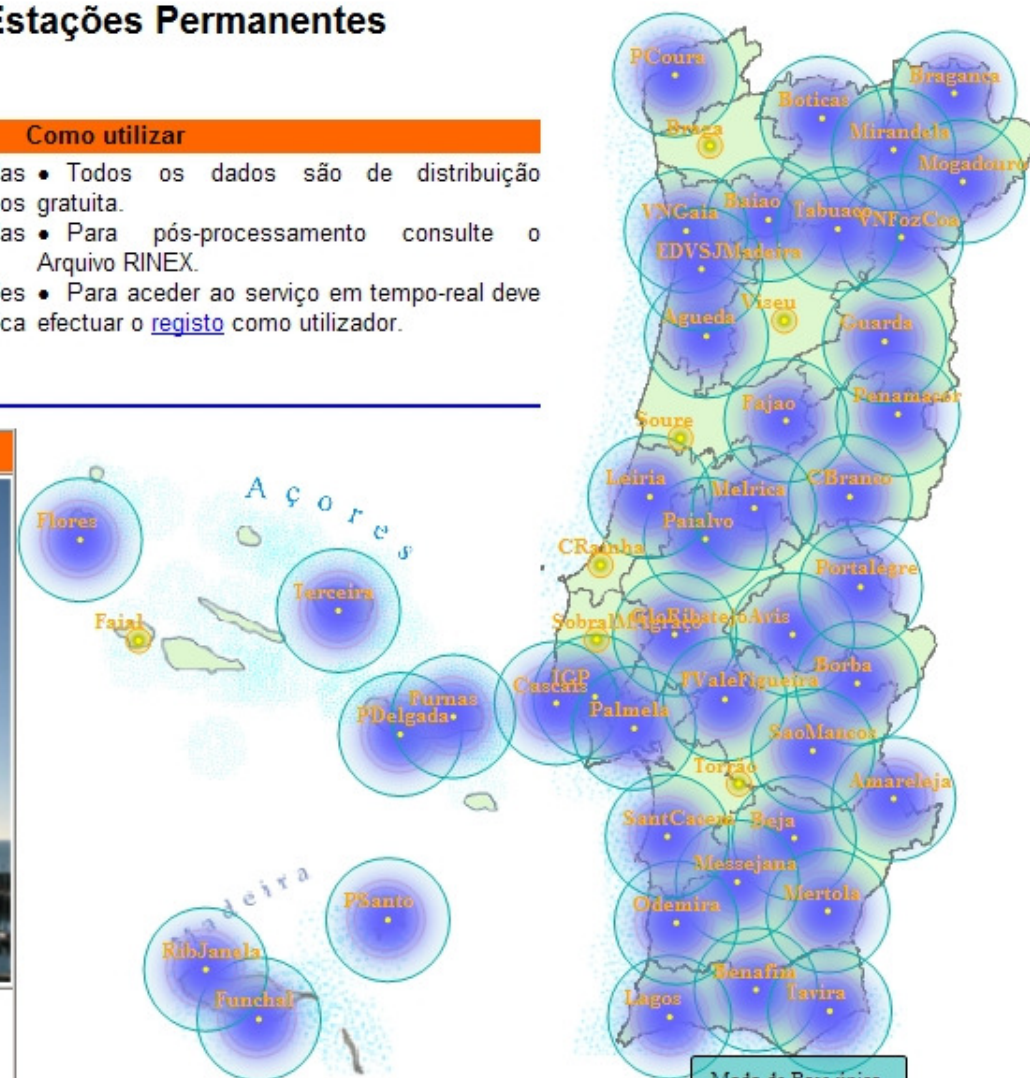
Para informações adicionais contacte a [Divisão de Geodesia](#)

Detalhes da cobertura



Selecione no mapa a Estação pretendida.

A RENEP é um sistema cooperativo. Se possui ou vai instalar uma Estação GPS, junte-se a [nós](#).



Modo de Base única

Cobertura em rede



ReNEP – Portuguese CORS Network

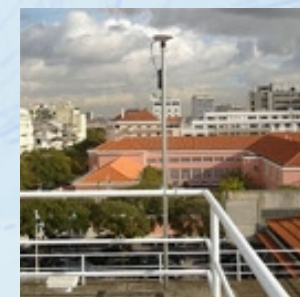
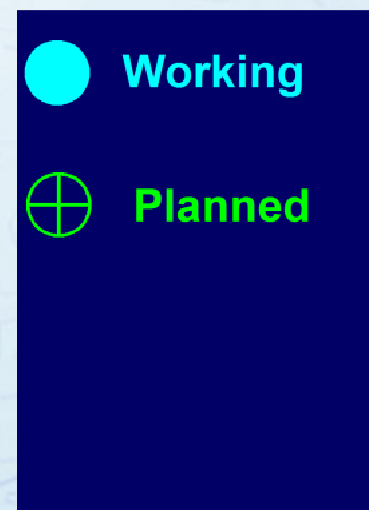
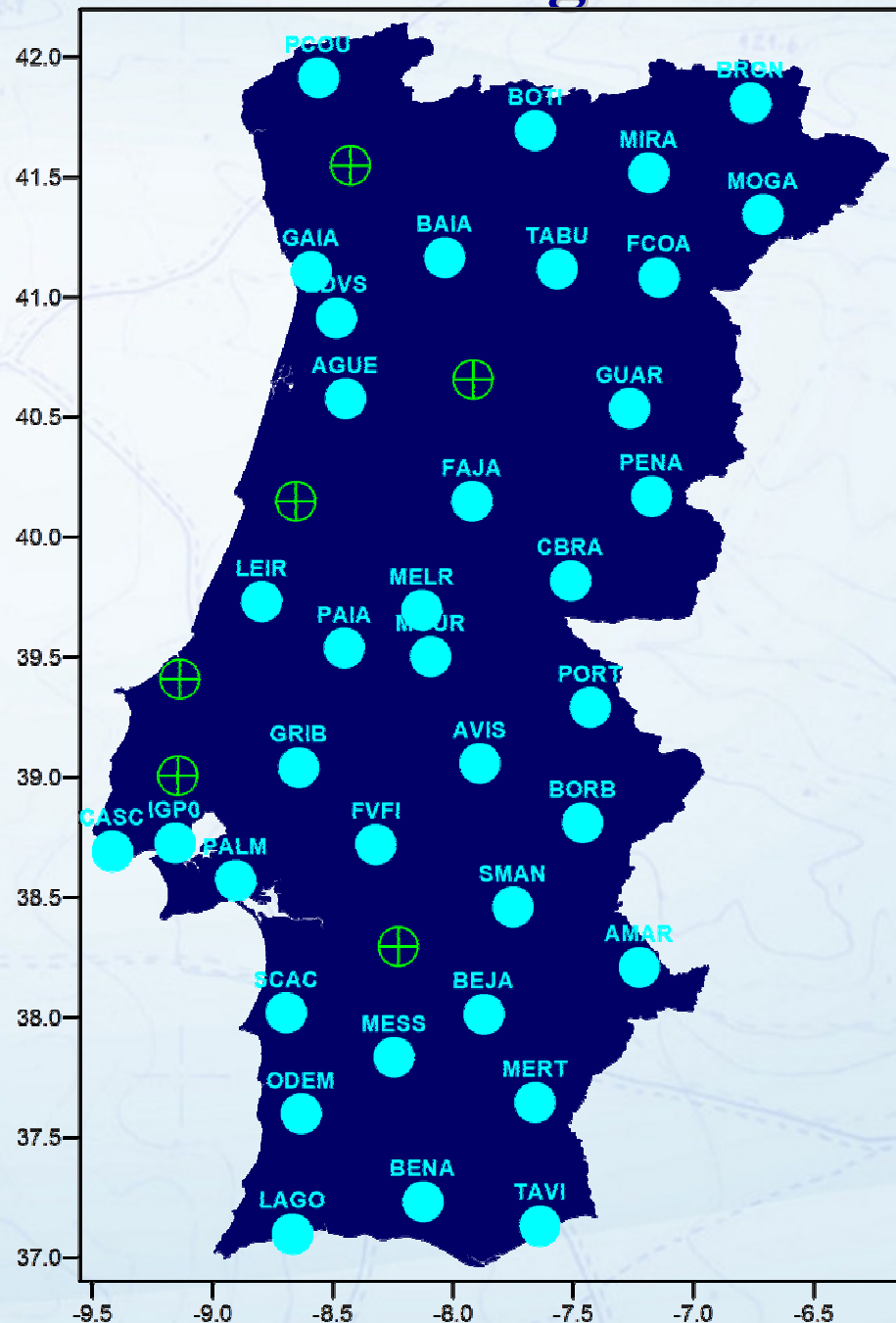
- 42 CORS: 37 Mainland + 4 Azores + 1 Madeira
- 37 IGP + 5 Partners
- 38 GPS&GLONASS



Coverage of 85 % of the
Mainland Territory

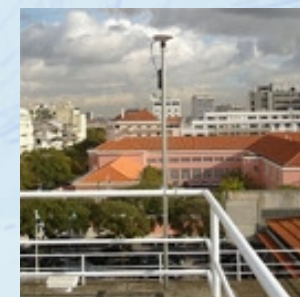
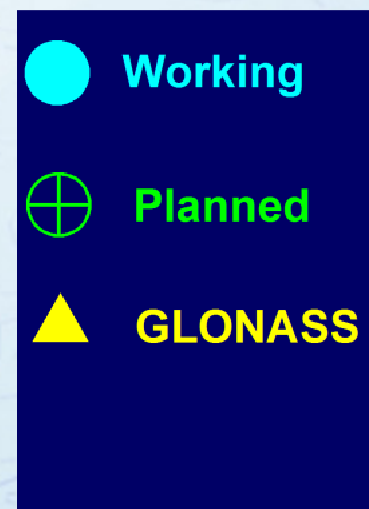
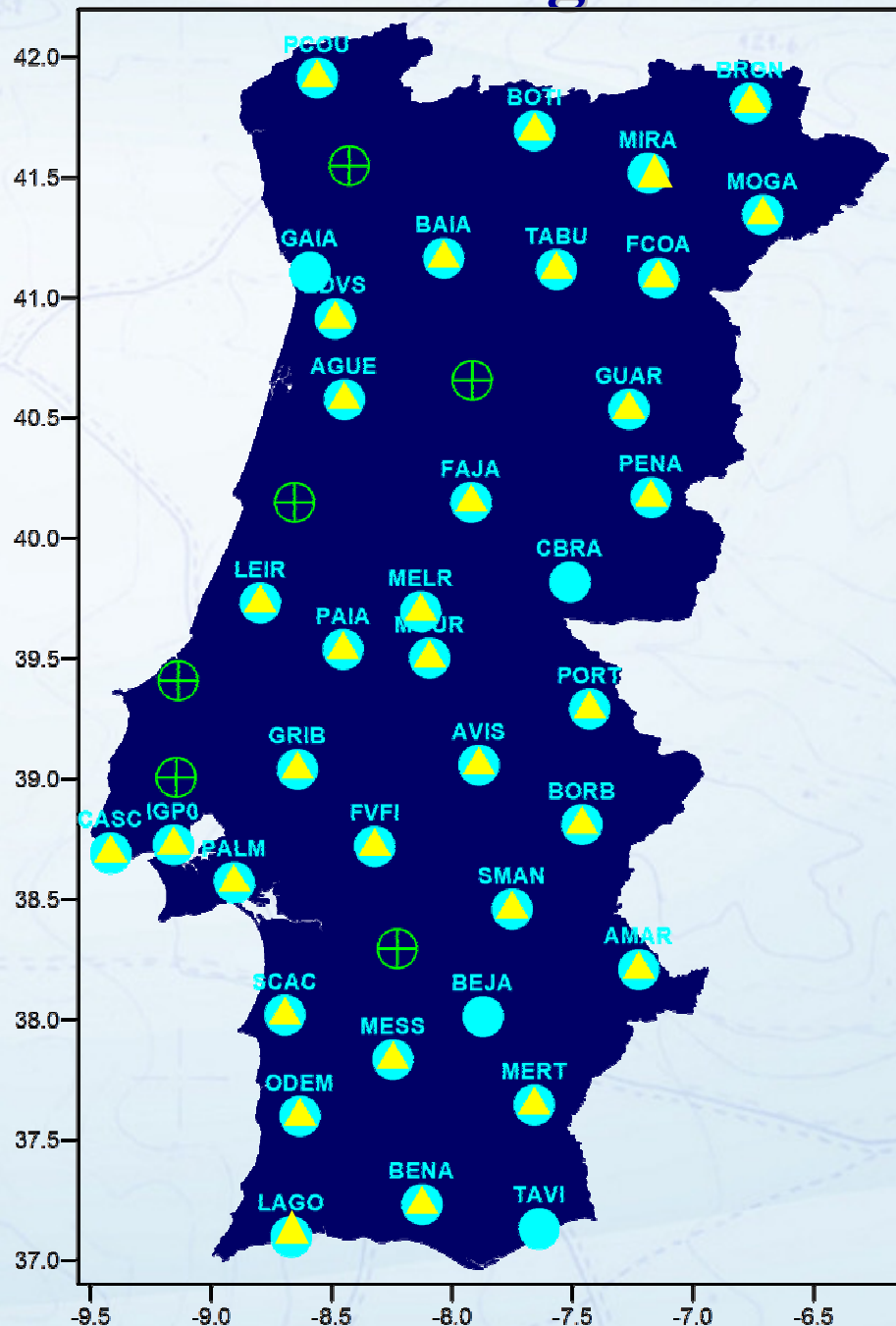


ReNEP – Portuguese CORS Network



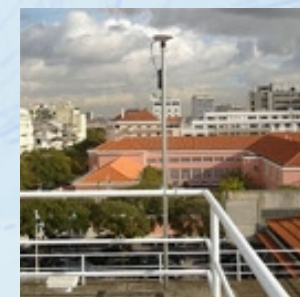
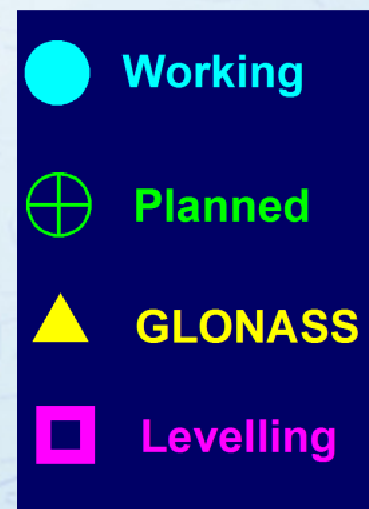
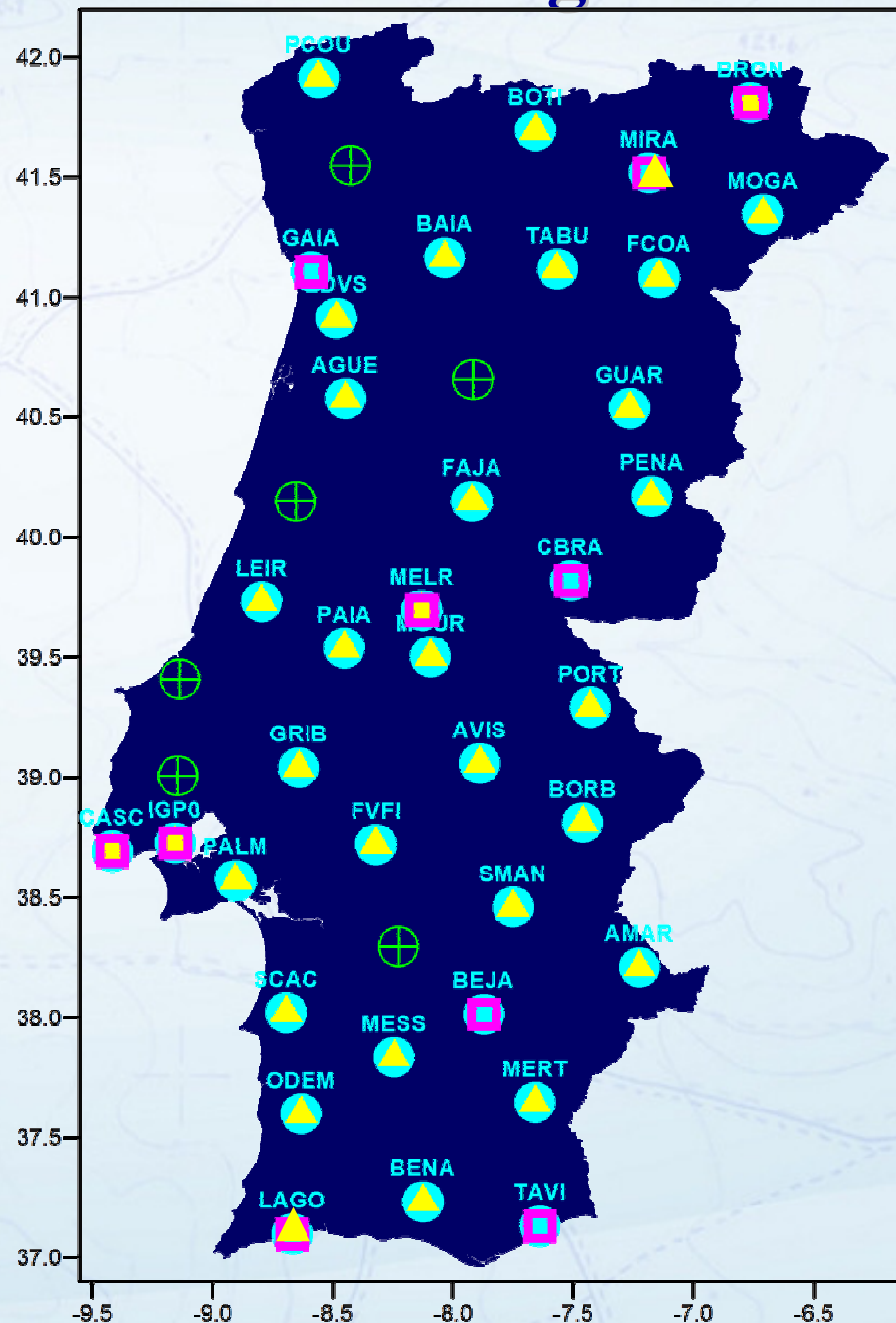


ReNEP – Portuguese CORS Network



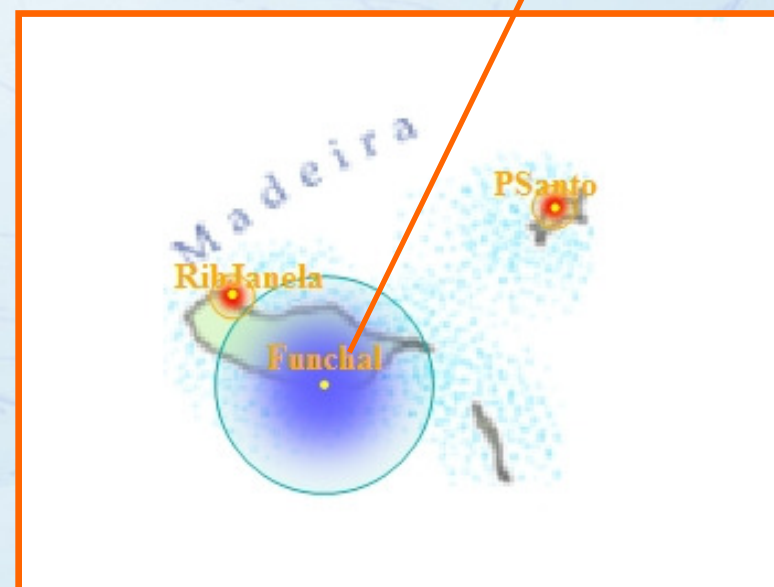
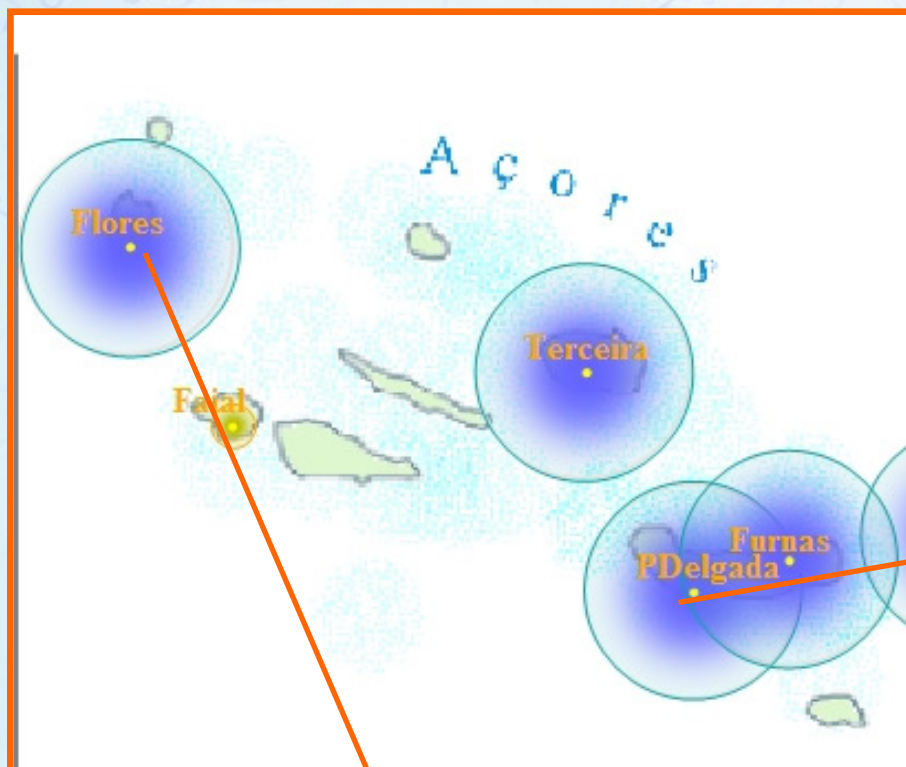


ReNEP – Portuguese CORS Network





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➤ **Post-processing:**

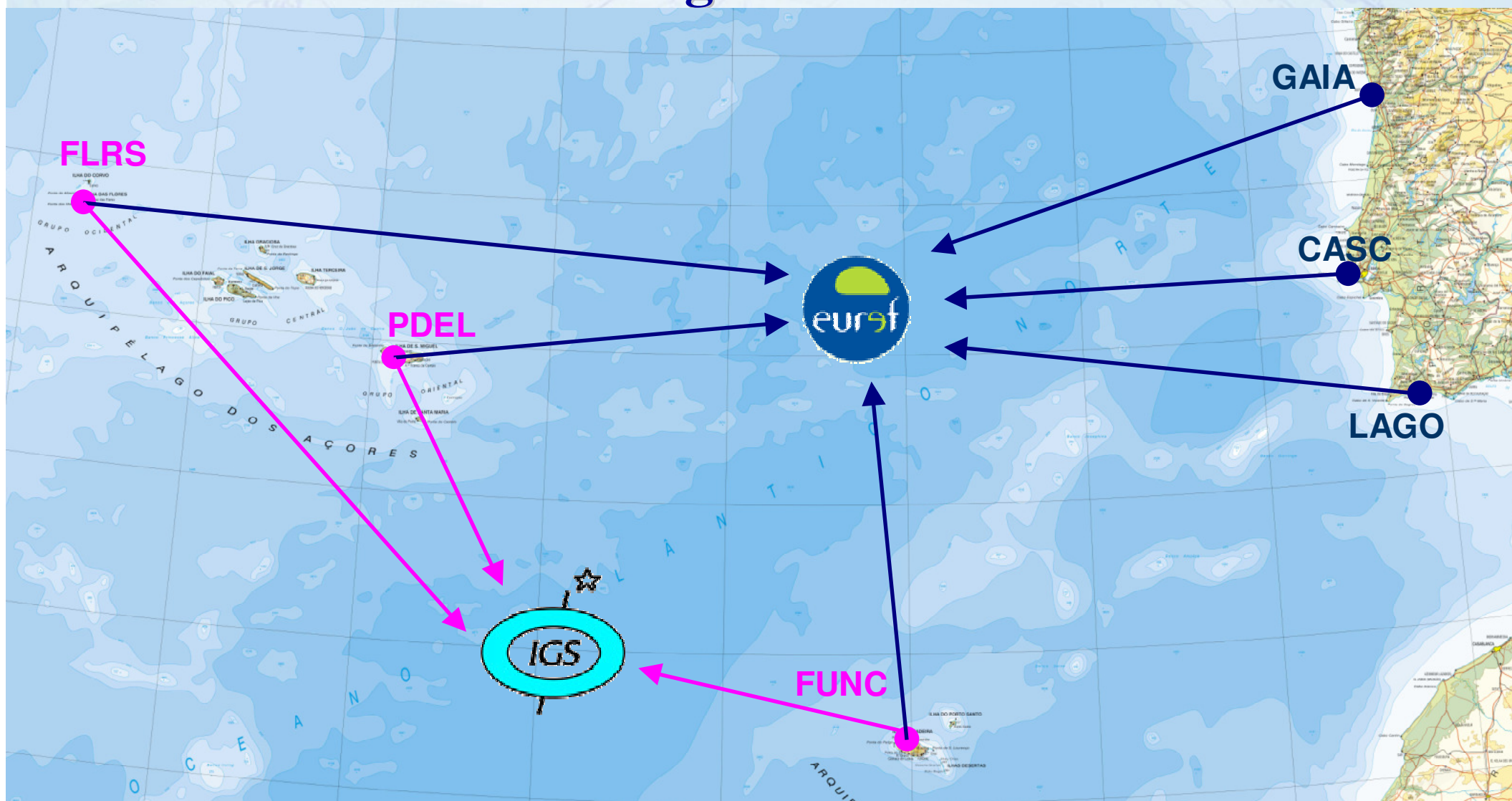
- **Hourly files at 5s**
- **EPN Stations: hourly and daily files at 30s**
- **RINEX 2.11 format**

➤ **Real Time:**

- **RTCM 3.0 (and 2.3) over NTRIP**
- **More than 900 registered users**
- **Frame: PT-TM06 (national realisation of ETRS89)**
- **SBS, NS, AC**
- **Free of charge**



ReNEP – Portuguese CORS Network



Station DONES	X	Y	Z	Frame	Epoch	valid from
CASC 13909S001	4917537.1411	-815726.4858	3965857.1207	ETRF97	1995 05 26	1997 03 31
GAIA 13902M001	44759095.6343	-718818.8833	4171491.1035	ETRF97	1995 05 26	2000 01 31
LAGO 13903M001	5035246.7052	-767657.3687	3826194.0614	ETRF97	1995 05 26	2000 01 31



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GPS + GLONASS

FLRS**PDEL****Meteo****Meteo
Levelling
AG****GAIA****Meteo
Tide Gauge
Levelling
AG****CASC****LAGO****Meteo
Tide Gauge
Levelling****Meteo****FUNC**

MONTHLY OUTAGE STATISTIC 1005 OF EUREF-IP NTRIP BROADCASTER STREAMS

BROADCASTER

NTRIPCASTER HOST DOWN OR UNAVAILABLE 0.00%
NTRIPCASTER SOFTWARE DOWN OR UNAVAILABLE 0.08%

OUTAGE	M-POINT	STREAM-IDENTIFIER	NETWORK
0.61%	CASC0	Cascais	EUREF
5.88%	FLRS0	Flores	EUREF
0.37%	FUNC0	Funchal	EUREF
0.37%	GAIA0	Vila-Nova-de-Gaia	EUREF
0.40%	LAGO0	Lagos	EUREF
2.90%	PDEL0	Ponta-Delgada	EUREF

MONTHLY OUTAGE STATISTIC 1005 OF IGS-IP NTRIP BROADCASTER STREAMS

BROADCASTER

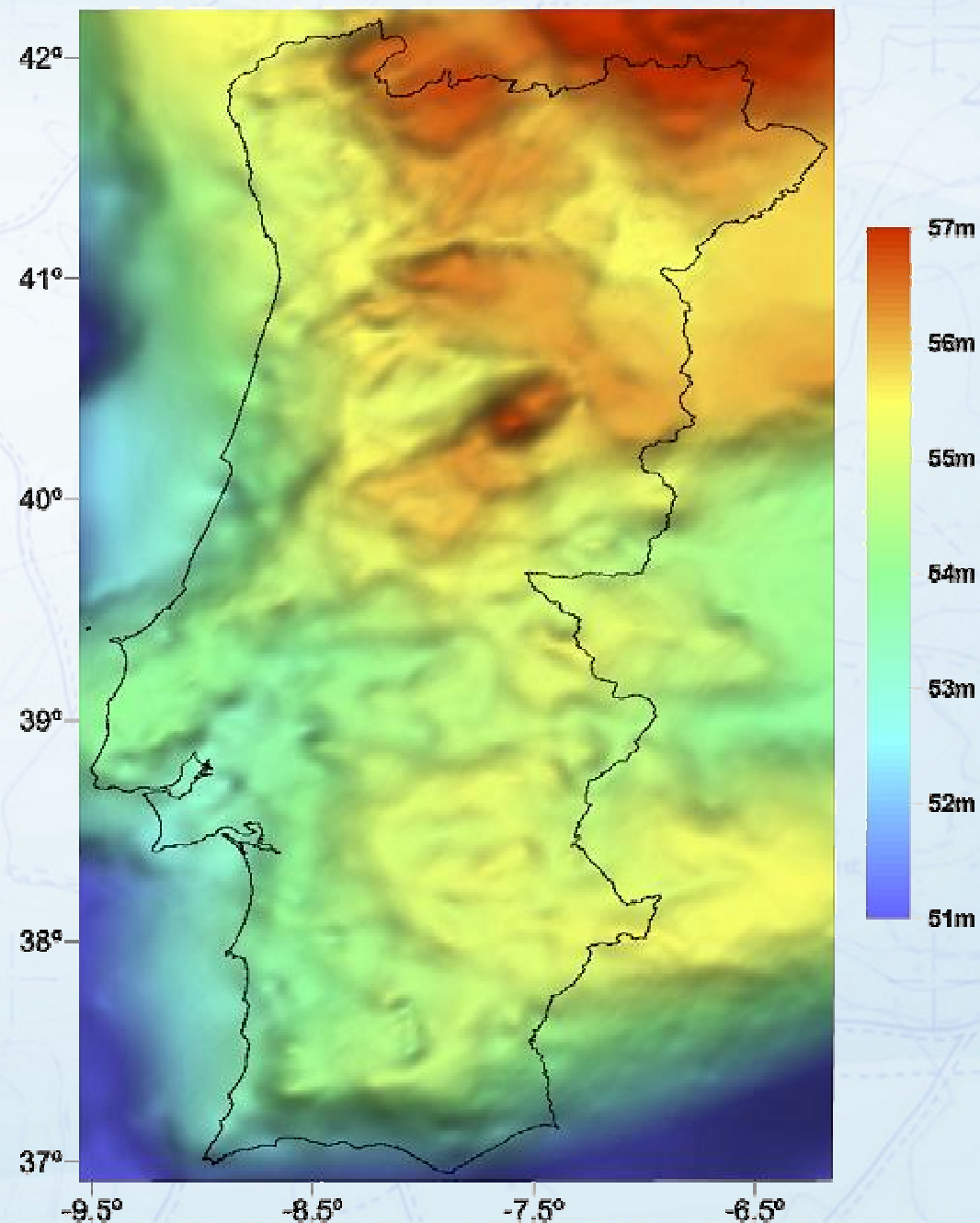
NTRIPCASTER HOST DOWN OR UNAVAILABLE 0.00%
NTRIPCASTER SOFTWARE DOWN OR UNAVAILABLE 0.09%

OUTAGE	M-POINT	STREAM-IDENTIFIER	NETWORK
8.47%	FLRS0	Flores	IGS
0.41%	FUNC0	Funchal	IGS
4.03%	PDEL0	Ponta-Delgada	IGS

Hourly Data Real-Time



Geoid Model – GeodPT08





EUREF Web Page

<http://www.euref.eu>

- Overview of EUREF
- Technical Working Group
- ETRS 89 (European Terrestrial Reference System)
- EPN (EUREF Permanent Network)
- GPS Campaigns
- EVRS (European Vertical Reference System)
- ECRS (European Coordinate Reference Systems)
- Symposia
- Documentation
- EUREF Electronic Mail
- Links
- @ E-mail to the secretary



Reference Frame Sub Commission for Europe

IAG Commission I



TWG Meeting in Padova, October 2009

1/6

EUREF Symposium 2010: Gävle / Sweden - June 02-05

This page is hosted by [Instituto Geográfico Português](#)

Updated: February, 24th 2010

EurefMaster@igeo.pt





EUREF Web Page



Technical Working Group Meetings and Documentation

List of TWG meetings

[Photo Gallery](#)

The minutes of the last meetings can be downloaded (see below)

51.	Padova, 13.10.2009	Download PDF files
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Technical Working Group Meetings and Documentation

Documents presented at the 51th TWG Meeting held in Padova

13 October 2009

1. Opening (Bruyninx)
2. [Minutes of the 50th TWG meeting in Florence](#) (All)
3. EUREF/EPN web
 - a. EPN coordinates web pages (Bruyninx)
 - b. On-line ITRS/ETRS89 transformations (Bruyninx)
 - c. [Monitoring of official national ETRF coordinates on EPN web](#) (Brockmann)
4. EUREF Permanent Network
 - a. [Update EPN Guidelines](#) (Bruyninx)
 - b. [Continuous cumulative solutions of EPN LACs – synchronization of solutions and improving EPN combination](#) (Habrich)
 - c. Real-time analysis Special Project (Söhne)
5. INSPIRE
 - a. Progress report (Torres)
 - b. [Possible mechanism for recognition of height systems/frames from EUREF in the perspective of INSPIRE](#) (Lidberg)
6. [ETRS89 Working Group](#) (Lidberg)
7. [EVRF Developments](#) (Ihde)
8. [ECGN](#) (Poutanen)
9. EUVN_DA
 - a. [New Italian data set for the EUVN-DA project](#) (Maseroli, Cauli, Caporali)
 - b. [EUVN_DA status and final report](#) (Kenyeris, Ihde)
10. [IAG WG "Regional Dense Velocity Fields"](#) (Bruyninx, Kenyeris)



Symposia

[Resolutions](#)[Next Symposium](#)[Photo Gallery](#)

The EUREF Symposium is the forum where the EUREF activities are discussed and resolutions are taken. It has been organized every year since 1990, with an exception in 1991, when it was replaced by the 'Common Meeting of the IAG-Sub-commissions EUREF, UELN, CRCM-WE (Commission on Recent Crustal Movements, Sub-commission Western Europe) and the CERCO-Working Group VIII'.

Place	Date	Publication
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Report on the Symposium of the IAG Subcommission for Europe (EUREF) held in Brussels, Belgium, 18 - 21 June 2008

PRESENTATIONS:

Opening Session

Chairperson: Pierre Voet

Welcome by the Col BAM, DEAO Royal Military Academy
J. Marsia

Welcome by the head of the section on "Time, Earth Rotation and Space Geodesy" of the Royal Observatory of Belgium
V. Déhant

Welcome by the Director General National Geographic Institute
I. Vanden Berghe

Welcome by the President IAG Commission 1 "Reference Frames"
Z. Altamimi

Welcome by the President IAG sub-commission 1.3 "Regional Reference Frames"
J. Torres

Welcome by the Chairman of the EUREF sub-commission 1.3a
J. Ihde

Session 1

Activities of the Technical Working Group (TWG)

Chairperson: Johannes Ihde

1.1 - Overview of the Activities of the EUREF Technical Working Group & Presentation of the Nominees for the EUREF TWG
C. Bruyninx

1.2 - ETRS89 Realization: Current Status, ETRF2005 and Future Developments
Z. Altamimi

1.3 - Realization of ETRS89: Alternatives, Future Concepts, Conclusions from the Definition
W. Gurtner, J. Ihde, J. Luthardt

1.4 - EVRF07 as Realization of the European Vertical Reference System
M. Sacher, J. Ihde, G. Liebsch, J. Mäkinen

1.5 - The Contribution of EUREF to INSPIRE
J. Torres, A. Caporali, H. Habrich

Session 2

Permanent GNSS Networks: New Developments





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