



MINISTÉRIO DO AMBIENTE E DO ORDENAMENTO DO TERRITÓRIO
Secretaria de Estado do Ordenamento do Território e da Conservação da Natureza
INSTITUTO PORTUGUÊS DE CARTOGRAFIA E CADASTRO

PORTUGAL

National Report

Presented at the EUREF Symposium

Held at Dubrovnik, Croatia

16-19 May, 2001

May 2001

National Report of Portugal

Presented at the EUREF Symposium held at Dubrovnik, Croatia

16-19 May, 2001

J. T. Pinto¹, H.K. Rodrigues²

Instituto Português de Cartografia e Cadastro
Rua Artilharia 1, 107, 1099-052 Lisboa, Portugal

¹itpinto@ipcc.pt; ²hkol@ipcc.pt

1. Introduction

The present report covers the activities of the Portuguese Institute of Cartography and Cadastre, IPCC, concerning the EUREF work, during the last twelve months. The following items will be focused: National Permanent GPS Stations Network (ReNEP-GPS), National Geodetic Network (RGN), Vertical Deflection Points Network (RPDV), First Order Levelling Network (RNGAP), Gravimetric Network (RNG) and integration of new personnel.

2. National Permanent GPS Stations Network (ReNEP-GPS)

As stated in the last report, three new stations were established in 1999-2000. These stations GAIA, LAGO and PDEL belong since earlier this year to EUREF network. At this very present moment we are establishing three new stations:

Mirandela, in Northeast of Portugal mainland; Beja in Southeast and Funchal in Madeira island.

The configuration of these new stations is as follows:

Trimble 4000SSi receiver; Trimble choke ring antenna; Paroscientific Met3 meteorological station; TRS control station software.

For the time being we keep collecting data at a 30 s rate, 24 h files.

For 2002 we intend to densify the network with three more stations: one in the centre of Portugal mainland, a control station to be placed in the IPCC headquarters and the third station to the Açores, Central Group.

3. NATIONAL GEODETIC NETWORK (RGN)

After the GPS observation of the first order network, connected to the IBERIA95 réseaux, a campaign concerning the observation of the 2nd order was started in 1998. Actually circa 30% of the 900 2nd order trig points are already observed. Due to financial constraints this project has been suspended during 2000. It should be resumed this year. The computations of these observations were carried out with GPS Survey and GeoLab. Since this year we are using the GeoGenius software package and we intend to recompute all the data with it.

The following standards are used to observe the 2nd order network:

- 4-5 double frequency Trimble GPS receivers
- 2 h session
- 15 s epoch interval
- elevation mask 10°
- occupation of two first order points in each session

4. VERTICAL DEFLECTION POINTS' NETWORK (RPDV)

As stated in last report the reobservation and densification of the VDP network started in 1999, using ICARUS system. In 2000, following a protocol between IPCC and the University of Lisbon, a special densification campaign along the central part of Portugal was launched. During this campaign the automatic ICARUS system has been put in operation together with a GPS Palissade receiver for timing purposes. Relative gravimetric observations were also performed in all stations of this dense network. We expect to have, by the end of the present campaign, more 150 VDP stations.

After the field work a precise integrated geoid model (direction, with VDP, +intensity, with gravimetric observations) for this central part of Portugal will be computed.

5. FIRST ORDER LEVELLING NETWORK (RNGAP)

In 2000, the reobservation of the first order levelling network has reached 100 km in mainland.

An adjustment in geopotencial numbers of the entire network was performed and computed new orthometric heights.

6. GRAVIMETRIC NETWORK (RNG)

In 2000 86 new gravimetric stations were observed along the levelled lines in 1999. These results were included in the edition of the isoanomalies map of Portugal mainland.

7. INTEGRATION OF NEW PERSONNEL

Following the public tenders of 1999 for the admittance of new high degree personnel the Geodetic Department of IPCC received, during 2000, 4 new technicians. The training of these new personnel was a little time consuming but now we expect to be able of improving the quantity and the quality of our future work.

REFERENCES

Pinto, J.; Kol, H.; Ribeiro, H., 2000 – National Report of Portugal, Report on the Symposium of the IAG Subcommittee for Europe (EUREF) held in Tromsø, 22 – 24 June 2000. Edited by João Agria Torres and Helmut Hornik, München 2000.

Qualquer pedido de informações adicionais sobre a matéria constante deste Relatório, bem assim como quaisquer observações que ele possa suscitar, devem ser dirigidos a



MINISTÉRIO DO AMBIENTE E DO ORDENAMENTO DO TERRITÓRIO
Secretaria de Estado do Ordenamento do Território e da Conservação da Natureza

INSTITUTO PORTUGUÊS DE CARTOGRAFIA E CADASTRO

Direcção de Serviços de Geodesia

Rua Artilharia 1, 107 1099-052 Lisboa, Portugal
Tel. ++ 351 21 381 96 00
Fax ++ 351 21 381 96 99
Email: ipcc@ipcc.pt