"NATIONAL REPORT OF GREECE"

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Activities of
Hellenic Military Geographical Service (HMGS)

1. Hellenic GPS Network 2002 (HEGNET2002)
2. Combined Hellenic Geoid 2005 (CHG2005)
3. Densification of HEGNET2002

1. Hellenic GPS Network 2002 (HEGNET2002)

This network consists of :

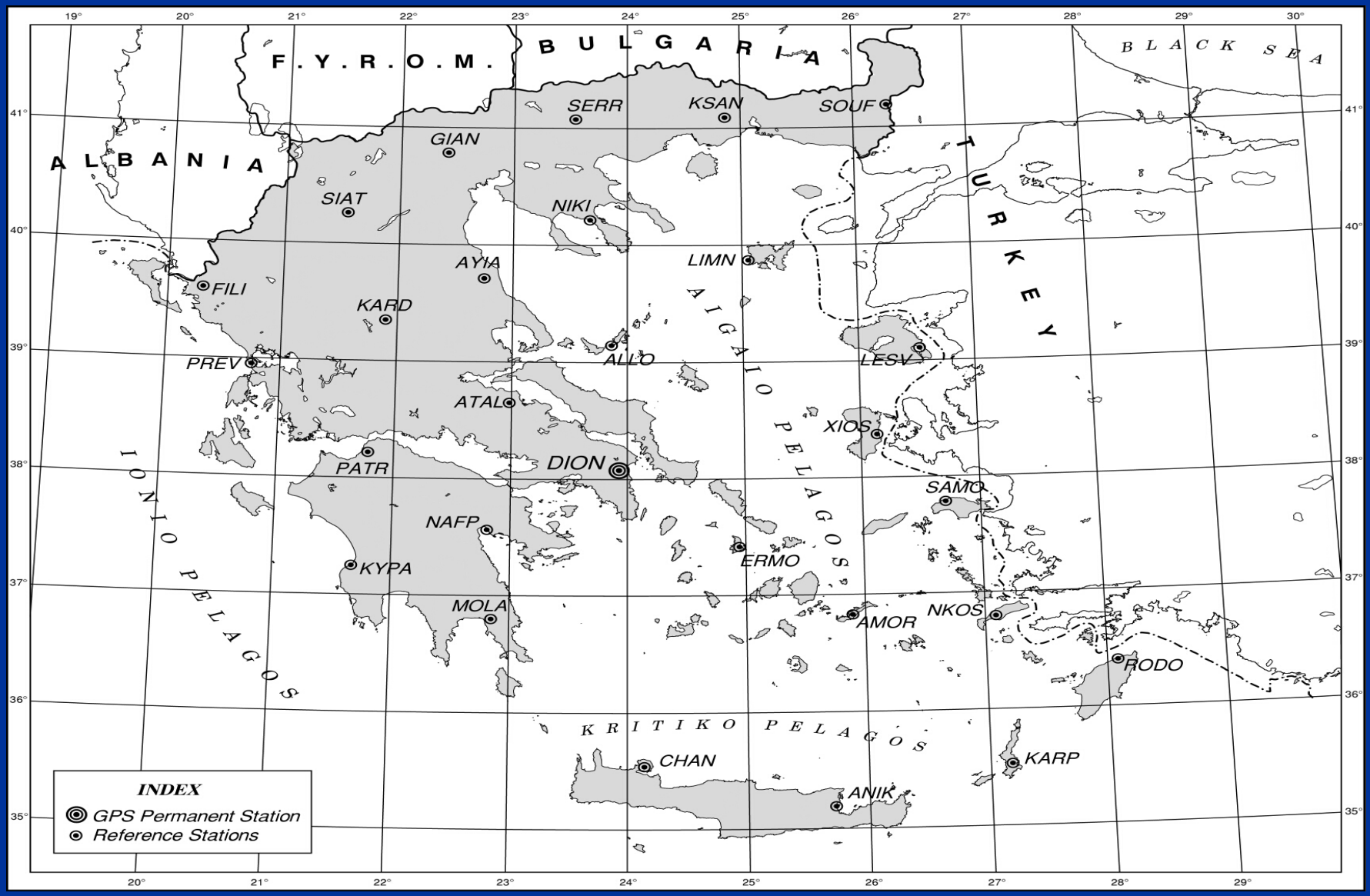
- **28 reference stations**
- **201 stations (pillars of triangulation network)**
- **9 tide stations (SELF program)**
- **5 SLR stations (WEGENER program)**

GPS measurements performed during the years of 2000 and 2001.

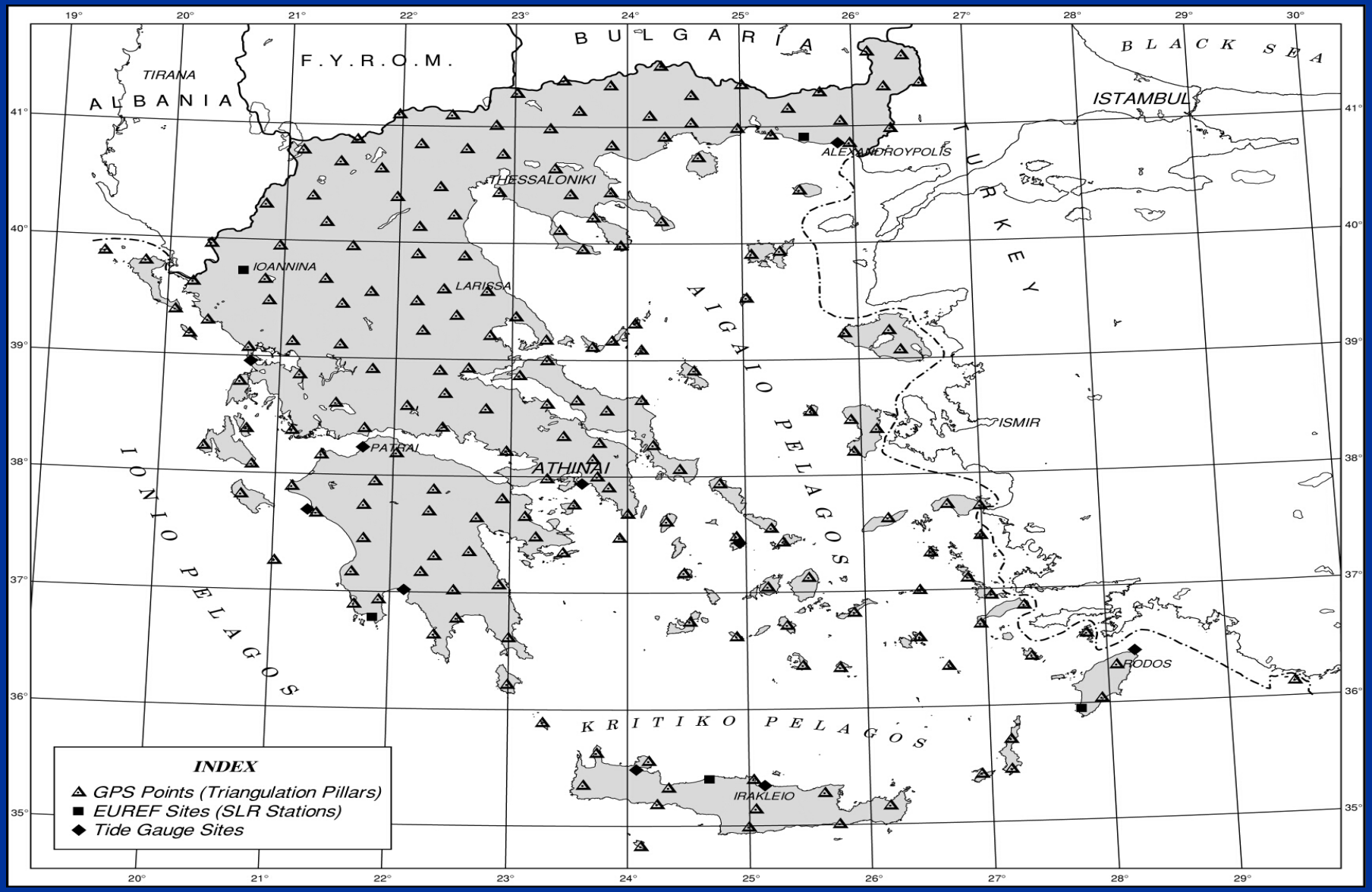
The coordinates of the reference stations are on ITRF'96 at epoch 2000.00 and have been computed with respect to the permanent GPS station at the Dionysos Satellite Observatory of National Technical University of Athens.

The processing of the network baselines performed using Bernese 4.2 software and completed in May 2003.

HEGNET2002 REFERENCE STATIONS



HEGNET2002 STATIONS



2. Combined Hellenic Geoid 2005 (CHG2005)

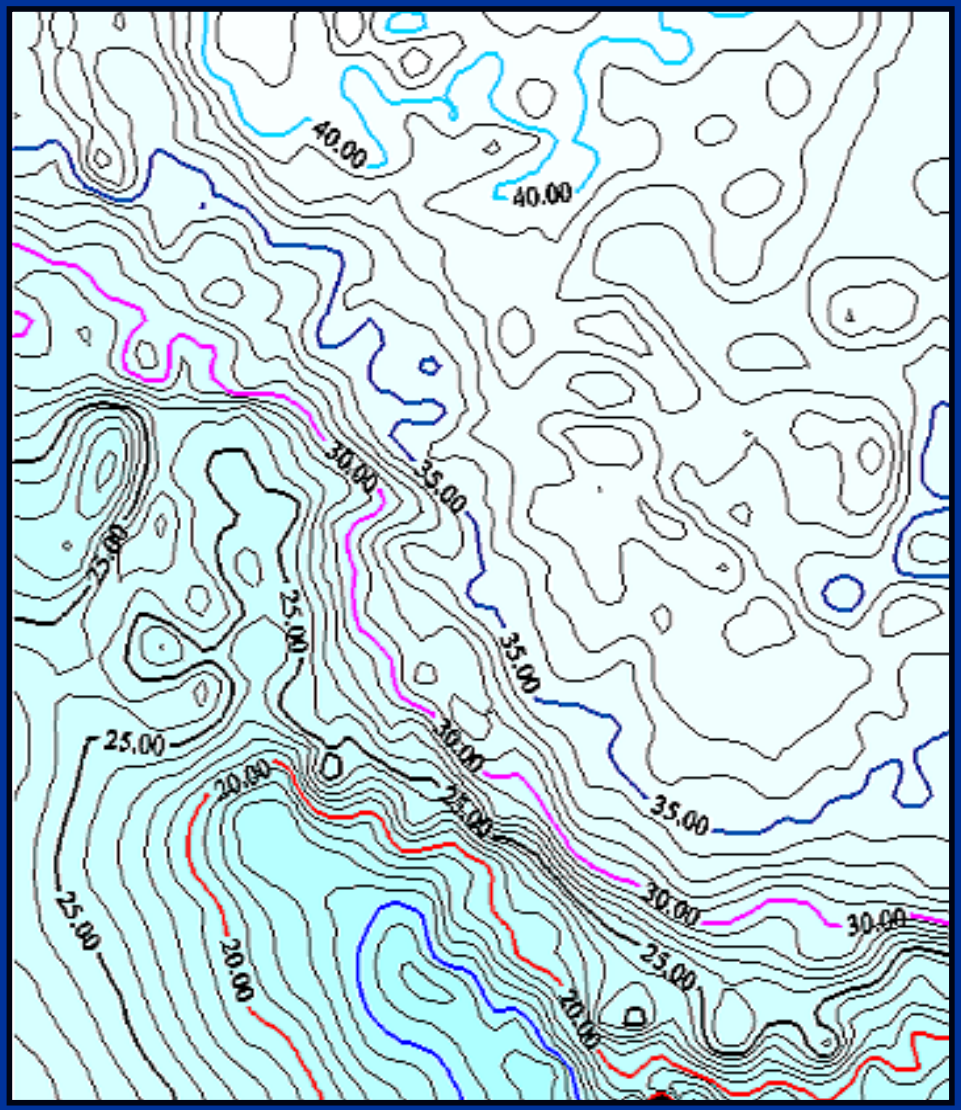
This geoid derived from combination of :

- **Free Air gravity anomalies**
- **Terrain Correction**
- **Contribution of atmosphere in the calculation of geoid undulation (N)**
- **Geoid undulation (N) using ellipsoidal height (h) from HEGNET2002 and orthometric height (H) from triangulation network**

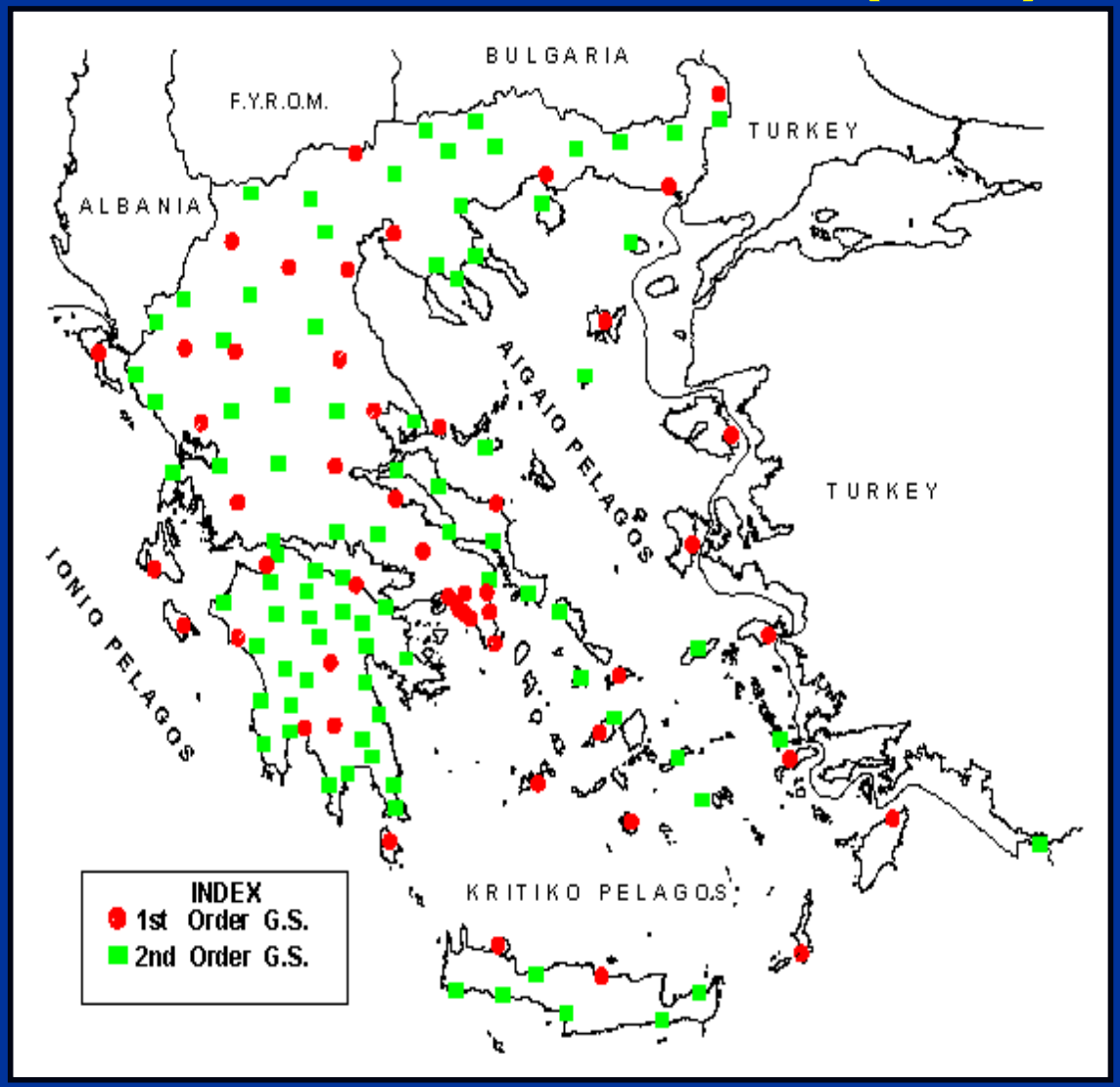
CHG2005 was calculated in WGS'84 and includes :

- **Roughly 6000 N points in grid 5'x6'.25**
- **201 points (HEGNET2002 pillars)**

CHG2005



Gravimetric Stations (G.S.)



3. Densification of HEGNET2002

HMGS, has already started to densify HEGNET2002, making simultaneous GPS and gravity measurements on pillars and levelling bench marks, in order to :

- **Optimize CHG2005**
- **Compute geopotential numbers of these pillars and levelling bench marks**
- **Compute local transformation parameters between WGS'84-HGRS'87 (Hellenic Geodetic Reference System of 1987) and WGS'84-ED50**

Transformation of coordinates will be computed by applying :

- **2nd degree polynomial equations of 6 or 12 coefficients (N,E)**
- **7 parameter (X,Y,Z)**

Simultaneous GPS and Gravity measurements

Densification Points