

## CP2.5 Gravity and Geoid in South America (GGSA)

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### Terms of reference and Objectives:

The project entitled Gravity and Geoid in South America, as part of the Commission II of IAG, was established as an attempt to coordinate efforts to establish a new Absolute Gravity Network in South America, to carry out gravity densification surveys, to derive a geoid model for the continent as a height reference and to support local organizations in the computation of detailed geoid models in different countries.

Besides, a strong effort is being carried out in several countries in order to improve the distribution of gravity information, to organize the gravity measurements in the continent and to validate the available gravity measurements.

The main objectives of the project are:

- a) To re-measure the existent absolute gravity stations and to encourage the establishment of new stations.
- b) To validate fundamental gravity network from different countries in order to establish a single and common gravity network for South America.
- c) To adjust national gravity networks and to link them together.
- d) To obtain and to maintain files with data necessary for the geoid computation like gravity anomalies, digital terrain models, geopotential models and satellite observations (GPS) on the leveling network of different countries.
- e) To provide a link between the different countries and the International Geoid Service in order to assure access to proper softwares and geopotential models for local geoid computation.
- f) To compute a global geoid model for South America with a resolution of 5' x 5' using the available data. To encourage countries to cooperate by releasing data for this purpose.
- g) To encourage and eventually support local organizations in different countries endeavouring to increase the gravity data coverage, to improve the existing digital terrain models, to carry out GPS observations on the leveling network and to compute a high resolution geoid.
- h) To organize and/or encourage the organization of workshops, symposia or seminars on gravity and geoid determination in South America.
- i) To test and to use future geopotential models derived from the modern missions (GRACE and GOCE) as well as any new combined model (e.g. GGM2007).

Links to be established in the project

- Bureau Gravimétrique International (BGI)

- International Geoid Service I – Milan
- International Geoid Service II – Saint Louis
- University of Leeds – GETECH
- SIRGAS

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