

International Gravity Field Service (IGFS)

<http://www.igfs.net>

Chairman: Rene Forsberg (Denmark)

Director of the Central Bureau: Steve Kenyon (USA)

Overview

The International Gravity Field Service (IGFS) is an “umbrella service”, coordinating the gravity-related services under the International Association of Geodesy (IAG). The IGFS was approved by IAG at the IUGG General Assembly in Sapporo 2003. The primary purpose of the IGFS is - in addition to the service coordination - to represent gravity field geodesy more unified in relation to other parts of geodesy, notably in connection with the IAG project GGOS – Global Geodetic Observing System.

Current structure of the IGFS

The following service entities are presently active under the IGFS umbrella:

- International Gravimetric Bureau (BGI) – *director S. Bonvalot, France*
- International Geoid Service (IGeS) – *director R. Bazargi, Italy*
- International Center for Earth Tides (ICET) – *director J. P. Barriot, Tahiti*
- International Center for Global Earth Model (ICGEM) – *director C. Kroner, Germany (t.b.c.)*
- International Digital Elevation Model Service (IDEMS) – *director P. Berry, UK*

In addition the Geodesy and Geophysics Department at National Geospatial-Intelligence Agency (NGA, *chief geodesist S. Kenyon*), serve a special role as an IGFS Technical Center, interacting both with the IGFS services and directly with the scientific community, supplementing especially BGI and IGeS activities in terms of collecting and disseminating gravity and geoid data. The activities of the IGFS is governed by an Advisory Board, consisting of the service directors, IAG representatives (*Y. Fukuda, M. Sideris*) and two members of the IGFS affiliates (*S. Bettadpur and H. Denker*). In the period 2005-9 the IGFS has had two working groups:

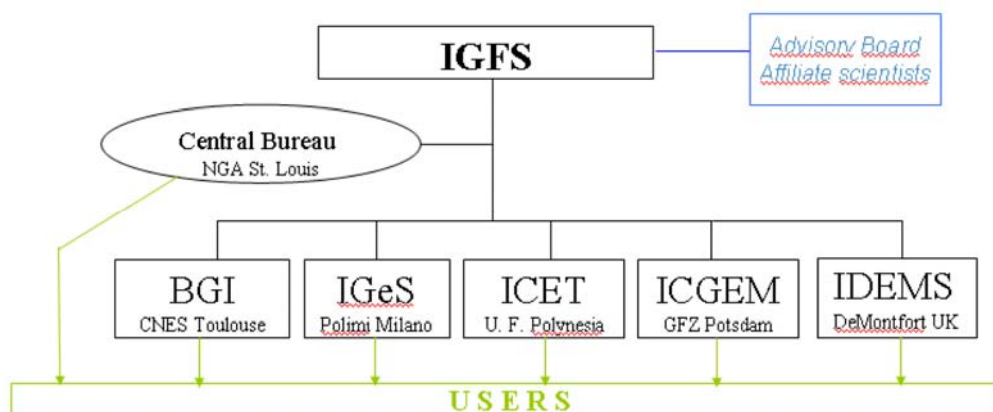
- *Working Group on Absolute Gravimetry – H. Wilmes, BKG, Germany*
- *Working Group on Evaluation of Global Earth Gravity Models – J. Huang, NRCAN, Canada*

The first working group was established in 2007 following the IGFS scientific assembly in Istanbul, 2006. The second – a joint group WG with the IAG Commission II – has just completed its work following the general release of EGM08.

Activities of the IGFS in the period 2007-09

The IGFS has actively helped in providing information on data sources for the new geopotential reference model EGM08, released by the US NGA (IGFS Technical Centre) in 2008, as well as provided an independent evaluation on pre-release models through the IGFS has actively helped in providing information on data sources for the new geopotential reference model EGM08, released by the US NGA (IGFS Technical Centre) in 2008, as well as

provided an independent evaluation on pre-release models through the evaluation working group. The EGM08 will serve as a de facto standard for global gravity field and geoid information for a foreseeable future, and also indirectly provides a practical definition of a global vertical datum (to be defined by a dedicated working group under the IAG).



Other main activities carried together with the services include

- Joint bulletin: Newton's Bulletin – joint electronic journal of the BGI and IGeS.
- Geoid schools: New IGeS Geoid School successfully held in Copenhagen and Como (June 2006 and Sept 2008).

The IGFS is also represented in the GGOS and IERS directing boards.

Web sites of the IGFS services:

- BGI – <http://bgi.cnes.fr>
- IGeS – <http://www.iges.polimi.it>
- ICET – <http://www.astro.oma.be/ICET>
- ICGEM – <http://icgem.gfz-potsdam.de/ICGEM/ICGEM.html>
- IDEMS - <http://www.cse.dmu.ac.uk/EAPRS/iag/index.html>

Meetings of the advisory board was held at the IAG 2007 General Assembly in Perugia, as well as at the IGFS Retreat, held in Bertinoro, Italy, March 24-25, 2008. This retreat was held immediately before the GGOS retreat at the same place.

During the Bertinoro IGFS Retreat the status and plans of the IGFS was reviewed, and it was decided that a Central Bureau is needed to get the necessary momentum in coordinating the Gravity Field activities. A roadmap laid out for a call for a Central Bureau. This call was issued in May 2009, with proposals due by July 15, 2009.

Potential lacking service elements in the portfolio of gravity field related services were also discussed and identified. These elements includes such items as future combination temporal gravity solutions (e.g., unified combination GRACE solutions between different centers) and the realization of a practical global vertical datum. There was also identified needs for more outreach material concerning the gravity field in general, as well as needs for concerted efforts to map the remaining continental and coastal regions of the earth with intermediate-wavelength gravity data, notably by airborne gravity projects.

Upcoming activities of the IGFS include the Central Bureau establishment (tentatively by Jan. 1, 2010), as well as the 2nd General Assembly of the IGFS, to be held in Fairbanks, Alaska, Sept. 2010 (t.b.c.).