

**CALL FOR PROPOSALS**  
**for hosting the**  
**Central Bureau of the International Gravity Field Service**

## INTRODUCTION

The International Gravity Field Service (IGFS) is a unifying 'umbrella' IAG service which

- coordinates collection, validation, archiving and dissemination of gravity field related data,
- coordinates exchange of software for gravity field activities,
- coordinates courses, information materials and general public outreach relating to the Earth's gravity field.

The IGFS was established by the International Association of Geodesy Executive Committee at the IUGG General Assembly in Sapporo, Japan, August 2003, and is an IAG 'level-2' service under IAG Commission 2 – Gravity Field. One of the main arguments for establishing the IGFS was to provide a leading role of the gravity field services, as one of the three fundamental pillars in the IAG's first project - GGOS, the Global Geodetic Observing System, which now is a major Component of the IAG.

The overall goal of the IGFS is to coordinate the servicing of the geodetic and geophysical community with gravity field related data, software and information. The combined data of the IGFS entities data will include satellite-derived global models, terrestrial, airborne and marine gravity observations, time-dependent gravity data, GPS levelling data, digital models of terrain and bathymetry, as well as ocean gravity field and geoid from satellite altimetry. Thus both the static and the temporal variations of the Earth's gravity field will be covered by the IGFS.

Another important role of the IGFS is to take new initiatives and coordinate international data collection projects, such as, e.g., Arctic and Antarctic Gravity and Geoid Projects, and the support of development of high and ultra-high resolution global geopotential models, such as NGA's EGM08 and its evaluation.

The IGFS is not handling gravity field data distribution directly. The IGFS will function as a unifying service and contact for the following gravity field related services (IGFS Centres):

- **BGI** – International Gravimetric Bureau – collection, archiving, distribution of gravity data. Hosted by CNES, Toulouse.
- **IGeS** – International Geoid Service – collection and distribution of geoid models and related software, geoid schools – hosted by Politecnico di Milano.
- **ICET** – International Centre for Earth Tides – collection and archiving of global Earth tide data, including data from the Global Geodynamics Project – hosted by the University of French Polynesia.
- **ICGEM** – International Centre for Global Earth Models – distribution of satellite and surface spherical harmonic models – hosted by GFZ Potsdam.
- **IDEMS** – International DEM Service – provision of Global Digital Terrain Models – hosted by DeMontfort University, UK.
- **IGFS Technical Centre** – National Geospatial-Intelligence Agency, USA (G&G dept.)  
- advises on global models, geoid and gravity, supplementing other services.

The structure of the IGFS centres is shown in Figure 1, and can be seen on [www.igfs.net](http://www.igfs.net).

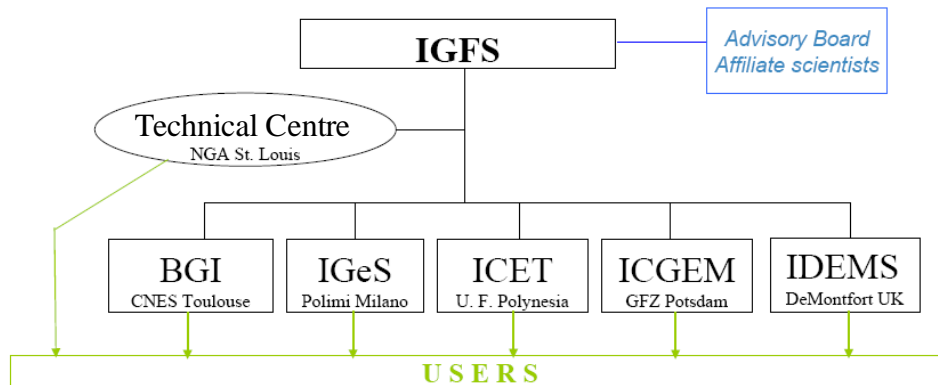


Figure 1: Structure of the IGFS.

Current working groups under the IGFS include

- Working Group on Absolute Gravimetry - Standardization and Networks – chaired by H. Wilmes, BKG, Germany.
- Working Group on Evaluation of Global Earth Gravity Models, chaired by J. Huang, Geodetic Survey Division, Natural Resources Canada.

The IGFS held a Retreat in 2008, and has identified areas such as implementation of a new global vertical datum, coordination of repeated global absolute gravity measurements, and the unification of temporal satellite gravity field solutions, as potential future tasks for the IGFS.

## THE ROLE OF THE CENTRAL BUREAU

### Charter

The Central Bureau of the IGFS serves as the executive arm of the IGFS Directing Board (former Advisory Board). The CB should organize and coordinate task forces to

- Define standards for gravity field data observation procedures, anomaly computations, and associated data corrections (meteorology, hydrology, postglacial rebound, etc.)
- Provide recommendations for data processing methods and reductions
- Establish data exchange and archival formats
- Define and implement fundamental geopotential reference systems
- Evaluate and recommend relevant auxiliary geophysical models
- Facilitate the provision of digital elevation models and density values for gravity field determination and modeling

The CB should coordinate activities related to

- The design and realization of global absolute and superconducting gravimetry networks, with special emphasis on co-located sites for GGOS and regional densifications
- The facilitation and coordination of regional gravity field determination and data exchange projects in order to improve medium to short wavelengths (e.g., Arctic and Antarctica)

- The definition and realization a global vertical datum
- The integration of terrestrial, airborne and satellite measurements in practice
- The improvement of the use of satellite-derived DEMs for gravity field modeling
- The evaluation and calibration of satellite-derived temporal gravity field variations as well as the improvement of processing of satellite data
- Making gravity data, geopotential models (static and time-variable), geoid estimates and other gravity field related products available for general use
- Public outreach on the Earths gravity field by
  - Organizing meetings and schools on gravity, geoid and related geophysics
  - Making software and tutorials for gravity and geoid analysis available.
  - Establishing and maintaining a web site with links to IGFS Centres

### **High Level Tasks**

- Provide link between the IGFS entities, IAG, and external projects, networks or organizations (oceanic, atmospheric, hydrologic, ...).
- Provide link to the GGOS bureau and communicate their requirements and recommendations to the IGFS.
- Implement standards and recommendations related to gravity field observations, secure consistency with geometric standards, and promote their use within the geoscientific community.

### **Organization**

- Tasks of permanent nature concerning all IGFS shall reside within the Central Bureau. Tasks of temporary nature may be delegated to ad-hoc committees and .
- The Central Bureau will be headed by a Director, and will have a secretariat to provide administrative, communication and web support.
- The Central Bureau will include such expertise as is necessary to conduct Bureau business and provide guidance and oversight to the supporting entities.
- Dedicated working groups and analysis may be set up for specific issues dealing with particular aspects of gravity field related issues.
- The Director will report to the IGFS Directing Board and the IAG Executive Committee. The Director forms together with the IGFS Chairman and the head of the Technical Centre the IGFS management group.
- The Director of the Central Bureau will be a member of the GGOS Steering Committee on behalf of the IGFS.

### **Interfaces with Internal and External Entities**

The Central Bureau acts essentially as representative of the IGFS and is liaison to other geodetic and geophysical services, especially to the GGOS entities. There must be a routine exchange of information and regular meetings with representatives of the IGFS. A close contact has to be kept to the GGOS Bureaus for 'Standards and Conventions', 'Networks and Communications' and 'Satellite Missions' as well as the 'Coordination Office'.

### **IGFS CENTRAL BUREAU - CALL FOR PROPOSALS**

On behalf of the International Association of Geodesy, the IGFS and its member services hereby request proposals for the operation of the IGFS Central Bureau. An organizational structure to operate the Central Bureau and an operational plan must be provided in the proposal. The proposal should clearly address the capabilities being offered by the institution, its financial ability and commitment to carry them out, and appropriate points of contact.

The funds required for the IGFS Central Bureau have to be provided by the proposing institution. Proposers may also solicit support from external entities in terms of financial contributions and expertise. From the proposal it should become clear that the proposing institution has the expertise, capabilities and financial background to perform the proposed tasks.

The initial term of this appointment will be 4 years. It may be terminated by either party with a 6 months notice. The term will be automatically renewed subject to satisfactory performance, unless either party gives notice 6 months prior to the end of the term.

## **PROPOSAL STRUCTURE, DEADLINE AND SUBMISSION**

The proposal should contain the following parts: title, proposing institution and its address, designated head of the bureau, abstract, goals, expertise, work and schedule and allocated resources. Proposals should be concise, no more than 4 – 5 pages in length. Proposals should be submitted electronically and by mail not later than April, 30, 2009. A pdf (or mailed-in) letter by the responsible head of the proposing institution, with the authority for the commitment of human and financial resources, should be enclosed.

Applications to be send to the IAG General Secretary:

International Association of Geodesy (IAG)  
c/o Deutsches Geodaetisches Forschungsinstitut (DGFI)  
Alfons-Goppel-Straße 11  
D - 80 539 Muenchen, Germany  
Tel +49 - 89 - 23 031 -1113  
Fax +49 - 89 - 23 031 -1283  
E-mail [iag@dgfi.badw.de](mailto:iag@dgfi.badw.de)

with a copy to the IGFS Chair Rene Forsberg at DTU-Space, National Space Institute of Denmark ([rf@space.dtu.dk](mailto:rf@space.dtu.dk); DTU-Space will not bid for the CB).

Questions to the present call can be directed to Rene Forsberg ([rf@space.dtu.dk](mailto:rf@space.dtu.dk)), Chair of the IGFS, or to Steve Kenyon ([Steve.C.Kenyon@nga.mil](mailto:Steve.C.Kenyon@nga.mil)), member of the IAG Executive Committee and head of the IGFS Technical Centre.

The proposals will be evaluated and ranked by an independent evaluation committee. The decision for awarding the IGFS CB is expected to be taken by the IAG Executive Committee during the IAG Scientific Assembly in Buenos Aires, September 2009. The successful proposer will be notified by September 15, 2009 with the goal to start the IGFS Central Bureau activities no later than the end of 2009.

## **SCHEDULE**

July 15, 2009:	Due date for proposals
August 15, 2009:	Report by evaluation committee to IAG
September 15, 2009:	Decision by the IAG and the IGFS Advisory Board.
October 1, 2009:	Notification of proposer on proposal acceptance
January 1, 2010:	Start of Central Bureau activities

*IGFS, April 28, 2009*