

International Geodynamics and Earth Tide Service (IGETS)

Chair: **Hartmut Wziontek** (Germany)

Director of the Central Bureau: **Jean-Paul Boy** (France)

<http://igets.u-strasbg.fr/>

1. Terms of Reference

1.1 Objectives

The primary objective of the International Geodynamics and Earth Tide Service (IGETS) is to provide a Service to monitor temporal variations of the Earth gravity field through long-term records from ground gravimeters, tiltmeters, strainmeters and other geodynamic sensors.

IGETS continues the activities of the Global Geodynamic Project (GGP) to provide support to geodetic and geophysical research activities using superconducting gravimeter (SG) data within the context of an international network. IGETS continues the activities of the International Center for Earth Tides (ICET), in particular, in collecting, archiving and distributing Earth tide records from long series of gravimeters, tiltmeters, strainmeters and other geodynamic sensors.

1.2 Products and Goals

IGETS is the main data center of worldwide high precision SG records; the products hosted at the IGETS data centers are:

- Raw gravity and local pressure records sampled at 1 or 2 seconds, in addition to the same records decimated at 1-minute samples (Level 1 products);
- Gravity and pressure data corrected for instrumental perturbations, ready for tidal analysis. This product is derived from the previous datasets, and is computed by one or several Analysis Centers (Level 2 products).
- Gravity residuals after particular geophysical corrections (including solid Earth tides, polar motion, tidal and non-tidal loading effects). This product is also derived from the previous dataset and is computed by one or several Analysis Centers (Level 3 products).

IGETS strives to provide long-term gravity residuals based on repeated absolute gravity measurements at particular stations accessible through the Absolute Gravity database.

IGETS also acts as the main data center of long-term series recorded from other geodynamic sensors (spring gravimeters, tiltmeters, strainmeters, etc.), including the historical dataset from the ICET databank.

IGETS may conduct comparison, validation and distribution of tidal analysis software or any other software, which can be used to process or correct gravity, tilt or strain long time series.

IGETS may organize symposia and workshops to provide a forum for presentation and discussion of all aspects of IGETS activities.

2. Permanent Components

IGETS accomplishes its objectives through the following permanent components:

- Stations
- Analysis Centers
- Data Centers

2.1 Stations

The IGETS network consists of high quality and stability measurements of gravity, tilts and strain, including superconducting gravimeters. Stations should comply with the performance standards for data quality and reliability, developed since 1997 during the Global Geodynamics Project (GGP), specified by the Directing Board.

2.2 Analysis Centers

The Analysis Centers are committed to produce data products accordingly to the recommendations and specifications defined by IGETS Directing Board, and send their final products to the main Data Center for dissemination to researchers and other users. They may produce any of the IGETS products, or any of the corrections needed to compute them.

The primary Analysis Center is responsible for computing SG corrected data (the Level 2 products). The final SG residuals (the Level 3 products) are computed by the secondary Analysis Center. The institutions currently in charge of these tasks are given in the attachment of the ToR; the attachment is not part of the ToR and can be changed by the Directing Board with two-third majority.

2.3 Data Centers

The IGETS Data Centers are repositories of any data products, including station log files. Their primary objectives are to collect, archive and distribute these data with efficiency and reliability. Data centers may mirror some of the other data centers to increase the accessibility of the IGETS datasets.

The primary Data Center hosts all SG data products (Levels 1, 2 and 3). A secondary Data Center is hosting all other datasets, including the historical products. The institutions currently in charge of these tasks are given in the attachment of the ToR, and can be changed by the Directing Board with a two-thirds majority of voting members.

2.4 Central Bureau

The Central Bureau is the executive arm of the IGETS Directing Board, and is responsible for all operational activities of the Service. The Central Bureau coordinates IGETS activities, facilitates communications, maintains documentations and organizes reports, meetings and workshops.

The Central Bureau operates on a term of four years. One year prior to the end of each term, the IGETS Directing Board formally reviews the performances of the Central Bureau, and may then request the Central Bureau to reconfirm its commitment to serve another four years. If the Central Bureau agrees, it submits a proposal for approval by the Directing Board. If the Central Bureau declines, or if the Directing Board chooses to change the Central Bureau, the Directing Board announces a call for proposal for a new IGETS Central Bureau, to take the responsibility including a six-month transition phase.

The Director of the Central Bureau serves as a member of the Directing Board.

IGETS will accept proposals at any time from scientific individuals, groups or institutions to become a new permanent component of the service (this can be a new station, or an analysis and/or data center). The Directing Board will review such proposals for approval.

3. Directing Board

3.1 Role and responsibilities

The Directing Board sets the objectives, determines policies, adopts standards, and sets the scientific and operational goals for IGETS. The Directing Board exercises general oversight of the activities of IGETS including modifications to the organization that are deemed appropriate and necessary to maintain efficiency and reliability. The Directing Board may determine appropriate actions to ensure the quality of the IGETS products.

3.2 Membership

The Directing Board consists of representatives of the IGETS components, members-at-large, appointed members and ex officio members. Its members are:

Elected Members (5)

- Raw Data Preparation representative;
- Analysis Center representative;
- Data Center representative;
- Network representative;
- Scientific Product evaluation representative.

Appointed Members (5)

- Director of the Central Bureau;
- Absolute Gravity Data Base representative;
- IAG representative;
- BGI representative;
- IGFS representative.

Members at large (2)

- The members of the Directing Board elect the Members at large in a second round after their nomination or election, to insure a better geographical distribution.

3.3 Elections

IGETS associates are voting for the elected members.

The elected members have staggered four-year terms. There is no limit to the number of terms that a person may serve, however he/she may serve only two terms consecutively as an elected member. All IGETS associates

are eligible to vote. Election is by a simple majority of votes received for each position. A vote by the Directing Board will resolve any situation of a tie.

3.4 IGETS Chair

The IGETS Chair is one of the Directing Board members and is elected by the Board for a term of four years with the possibility of reelection for one additional term. The Chair is the official representative of IGETS to external organizations.

3.5 Decisions

Most decisions by the Directing Board are made by consensus or by simple majority vote of the members present. In case of a tie, the Chair decides how to proceed. If a two-thirds quorum is not present, the vote shall be held later by electronic mail. A two-thirds vote of all Board members is required to modify the Terms of Reference, to change the Chair, or to replace any of the members before their normal term expires.

3.6 Meetings

The Directing Board meets at least annually or more frequently if meetings are called by the Chair or at the request of at least three Board members. The Board will conduct periodic reviews of the IGETS organization and its mandate, functions, and components.

4. Definitions

4.1 Associate Members

Individuals associated with organizations that support an IGETS component may become IGETS Associate Members. Associate Members take part in the election of the incoming members of the Directing Board.

4.2 Corresponding Members

IGETS Corresponding Members are individuals who express interest in receiving IGETS publications, wish to participate in workshops or scientific meetings organized by IGETS, or generally are interested in IGETS activities.

Attachment of the ToR

Analysis Centers

The primary Analysis Center, in charge of computing Level 2 products is hosted by the University of Polynesia (Tahiti, French Polynesia).

The secondary Analysis Center, in charge of computing the final gravity residuals is the EOST (Ecole et Observatoire des Sciences de la Terre) (Strasbourg, France).

Data Centers

The primary Data Center is the Information Systems and Data Center (ISDC) at GFZ (Potsdam, Germany), responsible for the collection of Levels-1, 2 and 3 data. The other datasets, including the historical products, are hosted at EOST (Strasbourg, France).

Central Bureau

The Central Bureau is hosted by the EOST (Strasbourg, France).

Founding Committee and current Directing Board (2016)

Chair of IGETS:	H. Wziontek, Germany
Director of the Central Bureau:	J.-P. Boy, France
Raw Data Preparation Represent.:	V. Palinkas, Czech
Analysis Center Representative:	J.-P. Barriot, France
Data Center Representative:	C. Foerste, Germany
Network Representative:	H.-P. Sun, China
Scientific Product Evaluation Rep.:	B. Meurers, Austria
Members at Large:	D. Crossley, USA J. Hinderer, France
Absolute Gravity Database Rep.:	H. Wziontek, Germany
IAG Representative:	S. Pagiatakis, Canada
BGI Representative:	S. Bonvalot, France
IGFS Representative:	N. Sneeuw, Germany