



Terms of Reference Global Geodetic Observing System (GGOS) 2011

*(Terms of Reference as officially adopted by the IAG Executive Committee
at the IUGG XXV General Assembly, Melbourne, Australia July 2011)*

GGOS Vision:

***Advancing our understanding of the dynamic Earth system by quantifying our planet's
changes in space and time***

Preamble

The proposal for the Global Geodetic Observing System (GGOS) was developed by the GGOS planning group between 2001 and 2003 according to the Bylaws of the International Association of Geodesy (IAG). The proposal was accepted by the IAG Executive Committee and the IAG Council at their meetings during the XXIII IUGG General Assembly in Sapporo in July 2003. GGOS was endorsed by the IUGG through Resolution No. 3 at the same General Assembly.

Changes in the IAG Bylaws in 2007 resulted in GGOS being recognized as an integral component of IAG along with Services and Commissions. As a historical note, this transformed the status of GGOS from that of an IAG Project to an IAG component. Specific to the GGOS is IAG Bylaw numbers 1(d) and 15.

During 2009 -2011, revisions to the structure of GGOS were discussed leading to these 2011 Terms of Reference, primarily to streamline the organizational structure of the GGOS.

According to the IAG Bylaws 1(d):

“The Global Geodetic Observing System works with the IAG components to provide the geodetic infrastructure necessary for monitoring the Earth system and global change research.”

GGOS Mission

We live on a dynamic planet in constant motion that requires long-term, continuous quantification of its changes in a truly stable frame of reference.

The mission of GGOS is:

- to provide the observations needed to monitor, map and understand changes in the Earth’s shape, rotation and mass distribution;
- to provide the global frame of reference that is the fundamental backbone for measuring and consistently interpreting key global change processes and for many other scientific and societal applications;
- to benefit science and society by providing the foundation upon which advances in Earth and planetary system science and applications are built.

GGOS Goals

The goals of GGOS are:

1. to be the primary source for all global geodetic information and expertise serving society and Earth system science;
2. to actively promote the sustainment, improvement and evolution of the global geodetic infrastructure needed to meet Earth science and societal requirements;
3. to coordinate with the international geodetic services that are needed to realize a stable global frame of reference and to observe and study changes in the Earth’s shape, rotation and mass distribution;
4. to communicate and advocate the benefits of GGOS to user communities, policy makers, funding organizations, and society.

In order to accomplish its mission and goals, GGOS depends on the IAG Services and

Commissions. The Services provide the infrastructure and products on which all contributions of GGOS are based. The IAG Commissions provide expertise and support for the scientific development within GGOS. In summary, GGOS is IAG's central interface to the scientific community and to society in general.

IAG is a Participating Organization of the Group on Earth Observations (GEO). GGOS acts on behalf of the IAG in GEO and actively contributes to the Global Earth Observation System of Systems (GEOSS).

GGOS addresses relevant science issues related to geodesy and geodynamics in the 21st century, but also issues relevant to society (including but not limited to management of natural resources, natural hazards, global risk management, monitoring of climate change and related phenomena, ocean forecasting and sea level projections, early warning of severe storms, tsunamis, other hazards, and space weather). It is an ambitious program of a dimension that goes beyond IAG, requiring a strong cooperation within the geodetic and Earth science communities, and externally, to related endeavors and communities.

The GGOS 2020¹ Book serves as the initial basis for the implementation of GGOS, as the observing system of IAG, and is used to derive work plans based on its recommendations.

Overview of GGOS Structural Elements

The organizational structure of GGOS is comprised of the following key elements:

1. **GGOS Consortium** - is the collective voice for all GGOS matters. It will meet annually as possible. The elements of GGOS have the flexibility to determine and designate two representatives to the GGOS Consortium as each (Service, Commission, or other entity) decides. The Consortium is to be comprised of the Chairs of Services and the Directors of the Service's central offices or Central Bureaus; Presidents and Vice-Presidents of IAG Commissions, and other entities essential to GGOS as determined by the Consortium. The GGOS Consortium is the nominating and electing body of elected positions on the GGOS Coordinating Board as noted below. The Chair of GGOS shall act as the Chair of

¹ Plag, Pearlman (Eds.), 2009, *Global Geodetic Observing System: Meeting the Requirements of a Global Society on a Changing Planet in 2020*, Springer Verlag Berlin, 2009 DOI: 10.1007/978-3-642-02687-4'

- the GGOS Consortium.
2. **GGOS Coordinating Board** – is the central oversight and decision-making body and represents the IAG Services, Commissions and other entities (see below).
 3. **GGOS Executive Committee** – serves at the direction of the Coordinating Board to accomplish day-to-day activities of GGOS tasks.
 4. **GGOS Science Panel** – advises the Coordinating Board and represents the geodetic and geoscience community.
 5. **IAG Services, Commissions and relevant Inter-Commission Committees** – are the fundamental elements comprising GGOS.
 6. **GGOS Working Groups and Themes** – address overarching issues common to several or all IAG components, and are a mechanism to bring the various activities of the Services and Commissions together, or to link GGOS to external organizations. Themes are cross-disciplinary and address specific areas where GGOS contributors work together to address broader and critical issues.
 7. **GGOS Coordinating Office** – coordinates the work within GGOS and supports the Chairs, the Executive Committee and the Coordinating Board.
 8. **Bureau for Standards and Conventions** – tracks, reviews, examines, evaluates all actual standards, constants, resolutions and conventions adopted by IAG or its components and recommends their further use or proposes the necessary updates.
 9. **Bureau for Networks and Communications** – develops a strategy to design, integrate and maintain the fundamental geodetic infrastructure including communication and data flow.

Details of the Structure of GGOS

1. GGOS Consortium

The GGOS Consortium is the voice and essentially the large steering committee of GGOS. It reviews the GGOS progress, activities, and nominates and votes for the candidates for the elected positions on the GGOS Coordinating Board.

The GGOS Consortium is comprised of two designated representatives from each IAG component, which designate their representatives. The Chair of the Service Governing or Directing Board, and the Director of the Central Bureau or Coordinating Office, the Commission

Presidents and Vice Presidents may be those designated members, however, no person can represent two components (but no one may have more than one vote). The Chair of the GGOS Consortium is the presiding Chair of GGOS. GGOS Consortium decisions are based on consensus. Decisions requiring a vote are decided by simple majority of the votes cast. The quorum is when at least one half of members are present, but electronic voting is acceptable provided a quorum responds.

The process for elections to the GGOS Coordinating Board will coincide with IAG’s schedule for elections, calling for nominations and elections 3 months prior to the four-year IAG General Assembly, which takes place during the IUGG General Assembly (see IAG Bylaws). Candidates nominated to serve on the CB must be members of the GGOS Consortium. However, the GGOS Chair is appointed by the IAG Executive Committee in consultation with the GGOS Coordinating Board, and is not appointed by the IAG Council (see IAG Bylaws: 15 (d) and 31-a-ii)

2. GGOS Coordinating Board

The Coordinating Board is the decision making body of GGOS. Decisions, to the extent possible, are based on consensus. Decisions requiring a vote are decided by simple majority of the votes cast. The quorum for a valid vote is participation of one half of the voting members of the Coordinating Board. Votes may be held at meetings or by appropriate electronic means at the discretion of the GGOS Executive Committee. The Coordinating Board will meet at least once yearly, although twice yearly is preferable.

Coordinating Board Members (all voting members except those indicated as non-voting):

GGOS Chair (votes in case of a tie)	1	
Vice-Chair	1	
Chair of GGOS Science Panel	1	
Head, Coordinating Office	1	(ex-officio, voting)
Directors of GGOS Bureaus	2	(ex-officio, voting)
IAG President or designated representative	1	(ex-officio, voting)
Service Representatives		
(elected by the Consortium)	4	
IAG Commissions Representatives		
(elected by the Consortium)	2	
Members-at-Large –		
Elected by GGOS CB	3	
<hr/> Total Voting Members	16	

And the following non-voting members:

Chairs of GGOS Working Groups	1+ (or more, ex-officio))
Theme Leads	3 (ex-officio)
GGOS Portal Manager	1 (ex-officio)
Immediate Past Chair of the CB	1 (ex-officio)
Representative of the GIAC/GIC	1 (ex-officio)
Total Membership of CB	16 voting/ 23 total, (plus any approved observers)

The chair of the GGOS Coordinating Board is determined according to the IAG Bylaws (IAG Bylaw 15 (d)). The Chair of the GGOS CB is also known as the GGOS Chair. The CB elects the Vice-Chair of the GGOS CB.

The Members-at-large are to balance the Coordinating Board with regard to geographical region or unique capability. The Chair, with the assistance of the Coordinating Office, appoints an Election Committee to organize the voting process and to ensure availability of the nominated candidates. The Election Committee presents the final list of nominations for the Members-at-large to the CB for a vote.

3. GGOS Executive Committee

The GGOS Executive Committee (EC) is composed of the following members:

GGOS Chair	1
Vice-Chair	1
<u>Voting Members of the CB selected for the EC</u>	<u>3</u>
Total	5

The GGOS Chair biennially submits his/her list of the three GGOS members for the EC to the GGOS CB for approval. EC candidates recommended by the Chair must be voting members of the CB.

The immediate Past Chair of GGOS, Director of the Coordinating Office, the Chair of the GGOS Science Panel, and the President of IAG are permanent guests at meetings of the Executive Committee. Other observers may be invited to attend EC meetings (usually teleconferences) as needed.

4. GGOS Science Panel:

The GGOS Science Panel is an independent and multi-disciplinary advisory board that provides scientific support to the GGOS steering and coordination entities.

The GGOS Science Panel is composed of up to 7-12 members.

Members are based on recommendations from the GGOS community and candidates are approved by the CB. The Science Panel will elect its own Chair to be approved by the CB.

5. Services, Commissions and Inter-Commission Committees:

GGOS works with these IAG components to provide the geodetic infrastructure necessary for monitoring the Earth system and global change research. GGOS respects the bylaws and terms of reference for these essential components. GGOS is built on the existing IAG Services and their products. GGOS is not taking over tasks of the existing, and well working IAG Services. GGOS will provide a framework for existing or future Services and strive to ensure their long-term stability.

6. GGOS Working Groups and Themes:

GGOS Working Groups (WG) are established by the Coordinating Board as needed. The Coordinating Board appoints the chair of any WG. A charter for each WG will be prepared and approved by the GGOS Coordinating Board. The members of WGs are nominated by the WG Chair and confirmed by the Coordinating Board. GGOS Working Groups can be set up for limited periods of time or as standing Working Groups. Themes are cross-disciplinary and meant to consider gaps and needed future GGOS products. The GGOS CB approves the themes. The CB appoints theme leads. Themes outline their purpose and propose a work plan to address any noted gap to be addressed by the particular theme focus.

7. GGOS Coordinating Office:

The GGOS Coordinating Office (CO) performs the day-to-day activities in support of GGOS, the Executive Committee, the Coordinating Board and the Science Panel, and ensures coordination of the activities of the various components. The CO ensures information flow, maintains documentation of the GGOS activities and manages specific assistance functions that

enhance the coordination across all areas of GGOS, including inter-services coordination and support for workshops. The CO in its long-term coordination role ensures that the GGOS components contribute to GGOS in a consistent and continuous manner and adhere to GGOS standards. The CO also maintains, manages and coordinates the GGOS Web presence.

The GGOS Portal is an important additional web presence that provides a unique access to all GGOS data sets and products.

8. Bureau for Standards and Conventions:

The Bureau for Standards and Conventions keeps track of the strict observations of adopted geodetic standards, standardized units, fundamental physical constants, resolutions and conventions in all official products provided by the geodetic community. It reviews, examines and evaluates all actual standards, constants, resolutions and conventions adopted by IAG or its components, and recommends further use or proposes the necessary updates. It identifies eventual gaps in standards and conventions and initiates steps to close them with, e.g., resolutions by the IUGG and/or IAG Councils.

9. Bureau for Networks and Communications:

The Bureau for Networks and Communications develops a strategy to design, integrate and maintain the fundamental infrastructure in a sustainable way to satisfy the long-term (10 - 20 years) requirements identified by the GGOS Science Panel. Primary emphasis must be on sustaining the infrastructure needed to maintain the evolving global reference frames, while at the same time ensuring the broader support of the scientific applications of the collected data. Coordinating and implementing the GGOS co-located station network is a key focus for 2010-2020.

Changes to GGOS Terms of Reference

These terms of reference can be modified by the GGOS CB with 2/3 vote, and approval by the IAG Executive Committee.

The rules contained in the current edition of 'Robert's Rules of Order Newly Revised' shall govern the GGOS in cases to which they are applicable and in which they are not inconsistent

with these Terms of Reference or any special rules that the GGOS CB may adopt.

Approval of the Terms of Reference

These Terms of Reference are approved by the IAG Executive Committee during the IUGG XXV General Assembly, Melbourne, Australia, July 2011.