

GGOS Call for Participation; The Global Geodetic Core Network: Foundation for Monitoring the Earth System

(See: <http://www.iag-ggos.org/sc/meetings/scm16/>)

***A Project of the Global Geodetic Observing System (GGOS) as a
contribution to the Global Earth Observation System of Systems
(GEOSS)***

Project Lead:

Michael Pearlman (mpearlman@cfa.harvard.edu)

Director, GGOS Bureau for Networks and
Communication

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State of the Current Network

Current Network

- IGS Stations about 417
- ILRS Stations – 40
- IVS Stations – 40
- IDS Stations - 57

But –

- only two stations that have all four techniques;
- sixteen stations with three techniques
- Although all of the Services have gaps in geographic coverage, the gaps in SLR and VLBI are of particular concern.
- All of the networks are an anachronistic mix of legacy systems (in some cases decades old) and modern systems.
- Performance differences between stations and system deterioration over time have seriously compromised overall network performance.

Objectives of the Call for Participation

- Working with the IAG Services within this project, GGOS aims to **facilitate closure of the major geographical and technological gaps** in the current global network of geodetic core sites;
- The project will **scope a network of core sites** that will have the requisite geographical coverage to allow the targeted reference frame accuracy to be achieved with the projected capability of the next generation space geodetic instruments;
- The technology for the new space geodetic instruments already exists; the performance of the essential components has already been demonstrated and/or is being integrated into prototype instruments now;
- A challenging technical aspect at the moment is the **measurement, and ultimately the monitoring, of the inter-systems vectors at the core sites;**
- When completed, the Global Geodetic Core Network will be a **major step in the implementation of Recommendation 9.1, which resulted from GEO Task AR-07-03;**
- It is recognized that the **core network will not materialize overnight, but will evolve** as stations are either upgraded or replaced with more modern and accurate versions and as new stations are built. As the network improves, so will the geodetic data products.

Mode of implementation

- The GGOS Call for Participation is being issued to all GEO Member Countries, Participating Organizations, and other organizations that may be interested.
- It requests participation in the planning and implementation of the GGOS Global Geodetic Core Network.
- Participation can be in many forms including: research and planning in the development and implementation of individual core sites, technological developments of the components of the core sites; establishment and/or operation of core sites; and provision of suitable locations for the core sites.

Tasks for the Call

We seek proposals from organizations that would participate in the development, implementation and maintenance of the GGOS Global Geodetic Core Network.

Seek proposals from groups:

- To support the network design and planning activity with analysis, simulations, site research (geology, weather, logistics, personnel, etc). A working group will be formed from those selected to help select the sites and encourage new participants in areas needing coverage.
- To help design and develop the inter-technique vector systems and operational procedures.
- To operate a space geodetic site and would implement and operate core stations including:
 - existing stations that already have the four techniques implemented and plan for upgrade to the next generation systems;
 - existing stations that have one or more techniques operational, are planning for upgrade to the next generation systems and for the implementation of the remaining techniques;
- To provide applicable space geodetic instruments for implementation at a GGOS Global Geodetic Core Site in cooperation with a local organization.
- That have no operational space geodetic sites, but would implement and operate core stations;

Proposals

- We encourage preformed teams to propose to implement/upgrade and operate these stations.
- We will also encourage team formation from among organizations that submit proposals and with new groups whose participation would benefit the Core Network.
- With regard to proposal teams,
 - one organization must be identified as the lead.
 - an organizational structure to carry out the proposed activity must be provided in the proposal.
 - The proposal should clearly address the capabilities being offered by the institution (or institutions), its financial ability to carry them out, and appropriate points of contact.
 - Each of the participating organizations should provide an institutional support form signed by the appropriate level authority (e.g. director, minister, etc.) to demonstrate the national or institutional commitment (whichever is appropriate) for the proposed effort.

RESOURCES and TERM

Resources:

- The funds required for this activity must be provided by the proposing institution(s) and agencies;
- 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(s) has/have the expertise, capabilities and financial resources to perform the proposed tasks.

Term:

- We encourage organizations to propose for long-term participation; the value of the Core Network depends upon its long term stability in configuration and performance;
- We request the proposals cover a period of at least 5 years, with the recognition that conditions beyond one's control may dictate a shorter period.
- Station commitment will be made by the proposing organization to GGOS. The agreement may be terminated by either party with 6 months notice. The term will be automatically renewed, unless either party gives notice 6 months prior to the end of the term.

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