

Multi-GNSS Asia (MGA)
TERMS OF REFERENCE

Formally adopted November 2011

PREAMBLE

Over the next decade we will see next generation Global Navigation Satellite Systems (GNSSs) being deployed, including the U.S.'s modernized GPS-IIF and planned GPS-III, the revitalised (and later to be modernized) GLONASS from Russia, Europe's GALILEO system, and China's COMPASS system. Furthermore, a number of Space Based Augmentation Systems (such as Japan's QZSS), and Regional Navigation Satellite Systems (such as India's IRNSS) will add extra satellites and signals to the multi-constellation GNSS 'mix'. What we learned in the GPS-only era will have to be augmented with new knowledge, about receiver hardware, algorithms, applications and user requirements. Asia Oceania Multi-GNSS Demonstration Campaign is the means by which the Asia Oceania region can gain early experience with the new signals and services based on multi-constellation GNSS.

BACKGROUND

The concept of the Multi-GNSS Demonstration Campaign in the Asia Oceania region was introduced by JAXA at the 4th meeting of the International Committee on GNSS (ICG) on 15 and 16 September 2009. The concept of the Multi-GNSS Demonstration Campaign in the Asia Oceania region relates to voluntary activities over the coming five or more years to promote the testing, development and adoption of new products and services based on multi-constellation GNSS. As a result of discussion, the ICG decided to support the Campaign. The specific plan of the Campaign was discussed at the first Asia Oceania Regional Workshop on GNSS on 25-26 January 2010 in Bangkok. The Multi-GNSS Demonstration Campaign in the Asia-Oceania region was declared to start at the second Asia Oceania Regional Workshop on GNSS on 21-22 November 2010 in Melbourne. The organization of Multi-GNSS Asia (MGA) was established with the aim to promote the Campaign activities in 4 September 2011 in Tokyo.

1. OBJECTIVES

Our goal is to promote social progress and better standards of life in the Asia Oceania region through the application of "Multi-GNSS" technologies for such purposes as, for example,, the mitigation of environmental and natural hazard impacts so as to ensure a safe and secure society,

and the encouragement of economic growth by peaceful utilization of “Multi-GNSS” products and services. In order to achieve this goal, the main objective of MGA is to encourage GNSS signal and service providers and user communities in the Asia Oceania region to develop new applications, and to carry out experiments or demonstrations by using all available “Multi-GNSS” systems whose interface control documents are public, on a best efforts basis in the spirit of international cooperation.

2. MEMBERSHIP

MGA membership is open to any organization including, but not restricted to, GNSS signal providers, government agencies, international organizations, private companies, universities, and research institutes with an interest in GNSS utilization in the Asia Oceania region. The membership should be balanced with respect to organizational representation and geography. The responsibilities of the member include: to participate in the regional GNSS workshop organized by MGA, to formulate and support the objectives of an implementation plan, to promote and support capacity building projects, to promote outreach projects, to assist in the formulation of plans for future activities, to maintain a point of contact, to investigate user requirements, and to support the secretariat.

3. ORGANIZATION

The MGA organization consists of several components, such as the Steering Committee, Network Sub-Committee, Working Group, Secretariat, and Observer.

- Steering Committee

The Steering Committee consists of two co-chairs of MGA, representatives from the ICG, a chair of the Network Sub-Committee, and two representatives from each Working Group. The co-chairs are selected from the members of the Steering Committee. The Steering Committee meeting shall be held annually. The members who are not able to attend the Steering Committee meeting may delegate to the co-chairs. Most decisions of the Steering Committee shall be accepted with a 1/2 majority vote of all members. The voting may be by the participants at the meeting, via the internet, and by members who have delegated to the co-chairs. Changes to the membership, which shall be proposed by one or more current members, shall be accepted with a 2/3 majority vote of all members. The persons approved to participate by the co-chairs can attend the meeting of the Steering Committee as observers.

The responsibilities of the Steering Committee are:

- To define the functions and procedures of MGA and maintain the “Terms of Reference”
- To manage general activities of the Campaign.
- To endorse the proposed plan for joint demonstrations including the Multi-GNSS

receiver allocation.

- Network Sub-Committee (SC)

Network SC has the following responsibility:

- To establish the Multi-GNSS monitoring network in order to generate precise orbit & clock offset estimation and prediction, time offset bias among multi-GNSS systems, ionospheric & tropospheric delays, and to facilitate experiments under multilateral and international cooperation.

- Working Group (WG)

WGs will be established as outcomes of discussions at the annual workshop, and will be terminated with the presentation of the results of the associated activities (demonstrations, experiments, etc). Each WG consists of co-chair, representative of several Teams and other members selected by the chair of the WG. Each WG will focus on a particular topic related to Multi-GNSS applications development and experiments. A WG may have responsibility for one or several Teams, either conducted jointly or independently.

- Team

Team is a minimum unit of the MGA organization, which is defined to implement each joint application development and demonstration under each WG, which will be largely managed by bilateral cooperation, depending on the category of the applications and the location where the experiment or demonstration will be conducted. Teams which have same or similar objectives and need common equipment like receivers can collaborate on such projects through WG discussion. WG will coordinate the sharing of resources among teams.

- Secretariat

Secretariat has the following responsibilities:

- To support the establishment of experiments related to Multi-GNSS applications in order to demonstrate the benefits of Multi-GNSS, as well as to highlight the importance of interoperability among Multi-GNSS systems.
- To share information on user needs and requirements related to Multi-GNSS among the GNSS signal providers.
- To support the activities of the Working Groups.
- To support activities that assist in securing funding to conduct the experiments and demonstrations.
- To organize annual workshops in the Asia Oceania region so as to facilitate the development of joint experiment plans and to act as a forum for reporting the results of

such experiments.

- To collaborate with UNOOSA's International Committee on GNSS (ICG) and related organizations.
- To be the contact agent for matters related MGA.

- Observer

Observer is defined as an international or local organization which supports the Multi-GNSS demonstration campaign activity.

4. OPERATION

The Asia Oceania Regional Workshop on GNSS shall be held once a year in order to share information and experiences, and to discuss the activities of MGA. The annual workshop will be hosted in a country of a participating organization in the Asia Oceania region. The annual workshop may be held jointly with the other symposiums and conferences related to GNSS in the region, such as the International Symposium on GPS/GNSS and IGNS. The meeting of the Steering Committee and Network SC shall be held at the same time as the annual workshops.

5. ACCESSION

- The organization, defined in the paragraph of MEMBERSHIP, may participate as an MGA member if approved by a 1/2 majority of all members of the MGA Steering Committee.
- If an organization wishes to participate as an MGA MEMBER, it shall express its intention by sending a formal letter to MGA.
- As soon as MGA receives the formal letter, the Steering Committee will consider it and respond to it by the formal letter of the co-chairs of the MGA.
- The procedure defined in the paragraph of ACCESSION shall be managed by the Secretariat on behalf of MGA.

6. WITHDRAWAL

Any participating organization may withdraw from the MGA by notifying the chairs of the MGA components in which the organization is involved, as well as the Secretariat of MGA.

7. AMENDMENT

This "Terms of Reference" may be modified if approved by a 2/3 majority of all members of the MGA Steering Committee.

8. MATTERS NOT PROVIDED FOR IN THE “TERMS OF REFERENCE”

In respect of any matters not provided for in this “Terms of reference”, the Steering Committee shall deal with the matters, and consider and make decisions with assistance of the Secretariat on a case-by-case basis.