GGOS Bureau of Networks and Observations Meeting

April 26, 2017
Vienna, Austria (TU Wien, Seminar Room 124)

Introduction (M. Pearlman):

The participants were welcomed to the April meeting of the GGOS Bureau of Networks and Observations (BN&O). The meeting agenda and a list of the participants are attached. The presentations can be found at http://ggosdays.com/en/meetings/2017/bno_vienna_2017/.

Sten Bergstand has been designated as the IERS representative to the BN&O.

Mike also clarified several items:

- The Bureau's role is one of advocating, advising, recommending, and even coercing etc., but the role of implementation falls with the IAG Services and their supporting agencies.
- Based on practicality, in addition to core sites, co-location sites will play a very important role in the GGOS Affiliated Network.

GGOS Update (H. Schuh):

The IAG Travaux is in process; we await the contributions from the GGOS components including the GGOS Bureau of Networks and Observations.

A decision by IAG on the new GGOS Chair will likely be made within the next 6-8 weeks.

Due to cost, ESA did not approve the Emotion 2 proposal, however, the proposal for the E-GRASP/Eratosthenes mission is pending; the IAG Services are encouraged to send another letter of support to Richard Biancale.

PLATO (B. Männel):

Simulations for E-GRASP type satellites are in process; a major task is the development of software to carry out realistic simulations. Work is also underway on recommendations and trade-offs for the ground (networks) and cross validation simulations.

The decision on whether E-GRASP/Eratosthenes will be funded is expected soon and several studies have already been conducted to support the proposal; on the other hand, future studies will be required to test different strategies and the influence of the in-space multi-technique calibration, so the PLATO activity should be actively pursued. Some projected network configuration models already exist to support network studies. Erricos Pavlis will share the link with the PLATO group so studies can get underway. The next station questionnaire will be conducted mid-year. Some of the sites (e.g., Hawaii) have SLR and VLBI as much as 200 km apart; studies need to be conducted on how effective a connection can be achieved using multiple baselines from local area networks.

Missions (J. Müller):

The missions list has been updated, and now includes DORIS satellites; the updated list will be put on a webpage, separated into categories (for ease of searching), and commented by the application and importance to GGOS. We discussed whether the GGOS geoid requirement of 1mm @10km of the geoid was too ambitious and should perhaps be relaxed to be more realistic. Locally 1mm is achievable, but not on a global scale. It is agreed that the 1mm accuracy for TRF should remain because it is important for politicians.

Data and Information:

Guenter Stangl:

Under phase 1, Carey Noll has a metadata scheme underway for GGOS data products, based on the system being implemented by the CDDIS. The intent is to have something with the GGOS label to the users this year.

Geoscience Australia is working on a more comprehensive metadata system to include in addition site and supporting information. This system uses GeodesyML, a powerful language being adapted more generally for geodesy. This second phase will require the Services to develop proper interfaces from their site logs and other site and system information. This may take and additional year or two but should have very powerful capability for searchability, information distribution, and machine-to-machine digital transfer. There may be some Intellectual property issues that need to be addressed since rules may depend on the country rules.

Fran Boler:

Fran Boler from UNAVCO is working with the IGS community on a recommendation for their metadata system. IGS wants operators of its network to be able to update metadata. The system should also allow different output formats. The GeodesyML scheme appears to be a great language and therefore they are recommending it, and they think that GGOS might also incorporate it, with some work adopting it for the GGOS services. The next step for IGS is to adopt software to get metadata into xml format. There has been a lot of progress, but many different groups are involved and it will take some time. See geodesyml.org

ISO TC 211 is a standard for many metadata systems. Below that, there is a markup language that fills the gaps for the users needs. The recommendation is to adopt this standard for GGOS, and have the Services extend this "standard" for their needs, consolidating common parts.

U. Hugentobler (for A. Neidhardt):

The book "Applied Computer Science for GGOS Observatories" by Alexander Neidhardt should be published shortly

M. Alizadeh:

M. Mahdi Alizadeh gave an introductory presentation on "Combination of Observation Techniques for Multidimensional Ionosphere Modeling" for sub-commission 4.3 (Atmosphere Remote Sensing) within IAG Commission 4 (Positioning and Applications).

Discussion on the Implementation Plan (M. Pearlman):

The Bureau's role is one of advocating, advising, recommending, and even coercing etc., but the role of implementation falls with the IAG Services, the stations, and their supporting agencies.

The format of the implementation plan is awkward and should be changed next time to be shorter, clearer, and less repetitive.

The entities within the Bureau should answer the questions "What are we doing for GGOS?" and "How are we forwarding its mission?". Studies and task performed by the Committees should be realistic and address the "real-world" results and be constrained by realistic assumptions.

The question arose as to where the implementations plans are submitted? Who reviews them? Apparently there is no formal procedure. But the IAG Executive Committee and the GGOS Coordinating Board give feedback; GGOS and its entities should use the plan as a guideline to measure progress.

Zuheir Altamimi provided some comments. He urged the Bureau to develop concrete ideas and actions to improve geodetic infrastructure, together with space agencies and mapping agencies. The UN initiative goes in this direction. How can we coordinate efforts in order to improve geodetic infrastructure? Answering this question will be beneficial for geodetic products as well. There is seen quite an improvement in VLBI, but not so much in SLR. It is not easy to judge: 40 SLR stations, but some do not provide what we need. And a minority of SLR stations provides the majority of the data.

Chopo Ma asked how does GGOS support the UN-GGIM? The BN&O has not made an effort in this direction.

Gary Johnston responded. The UN Committee asks key stakeholders (nations, IAG representatives, NASA, etc.) to contribute. This process is running. Answers (UN Committee) to GGOS will come after UN Committee will get answers. In this respect, the ball is in the UN-GGIM court at the moment, not the GGOS court.

John LaBrecque asked, how are the stations given feedback on their productivity?

Chopo mentioned that IVS station performance is monitored and the stations get feedback.

Mike and others mentioned that the ILRS stations are given monthly and quarterly feedback through (1) the on-line report card with station performance assessments from several analysis centers; (2) weekly reports on any data issues from Hitotsubashi University (Toshi Otsubo), Technical University of Munich (Horst Mueller); and the University of Maryland (Erricos Pavlis), (3) posted diagnostics on the web, and (4) annual clinics held at ILRS workshops. They also receive more direct contact when issues persist. The ILRS also has new activities underway including a study group on "value assessment" to rate stations in terms of their contribution to the final data products, and the implementation of a Quality Control Board that is developing additional web and diagnostic tools. A user survey is also underway to try to improve the response to GGOS and other scientific needs.

The IGS provides similar feedback to its stations.

The IDS provides centralized cooperation and monitoring.

Mike asked for feedback and thoughts from all participants.

IAG Service Presentations:

Unfortunately, due to time constraints, the IAG Service presentations could not be given. These presentations, however, are included in the website listed above for the Bureau's April 2017 meeting.

The next BN&O Meeting will be scheduled at GGOS Days in Korea (September 2017) and then during the Fall AGU (December 2017).