REPORT ON THE SEVENTH MEETING OF THE INTERNATIONAL COMMITTEE ON GLOBAL NAVIGATION SATELLITE SYSTEMS (ICG-7)

Beijing, China, November 2012

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INTRODUCTION

The Seventh Meeting of the International Committee on Global Navigation Satellite Systems (ICG) was held in Beijing, China from 5 to 9 November 2012. The ICG has been formed as a result of recommendations of the UN Committee on the Peaceful Use of Outer Space (COPUOS), as ratified by the General Assembly of the UN. The International Federation of Surveyors (FIG) is an Associate Member of the ICG. Mikael was there as the FIG representative to UNOOSA and Matt was there as FIG's co-chair for Working Group D. More than 220 people attended the meeting with representatives from all of the GNSS/RNSS providers except India. There were also many representatives from other countries and non- government organisations.

JOINT STATEMENT FROM ICG-7

At the end of each meeting, the ICG issues a Joint Statement outlining the highlights of the broad scope of work across the ICG and the most recent developments in China. Various presentations were made at the plenary sessions and working group sessions of the meeting and they form a very useful snap shot of the state of the art with the various GNSS and also with issues across key user groups. The Joint Statement from ICG-7, Working Group Reports and all presentations will be available in due course on the ICG Information portal.
(see www.oosa.unvienna.org/oosa/en/SAP/gnss/icg/meetings.html).

REPORTS ON THE STATUS OF ALL OF THE MAJOR GNSS SUB-SYSTEMS

The system providers are at the core of the overall work of the ICG and a feature of the first Plenary Session of the ICG is a series of presentations on the status of all of the major GNSS sub-systems. Presentations also outline the views of each of the system provider nations on the issues of Compatibility and Interoperability. System developments to note at ICG-7 include:

- As host country, China started the presentations and highlighted the planned phases of Beidou including:
    - Since ICG-6, six new satellites have been launched. In total, the number of satellites is now 15 of which five are GEOs. There is already significant coverage in the Asia Pacific region.
    - Initial Operational Capability (IOC) for the regional component was declared December 27, 2011 and documents have been released for the Interface Control Document (ICD) of BeiDou system (test version) and Development of BeiDou Navigation Satellite System (v 2.0). An updated version of ICD is likely to be released soon to support receiver development by industry.

- Phase 2 of BeiDou, the regional component is expected to reach Full Operational Capability (FOC) in 2013.
- Following that Phase 3 will begin to progress from regional to full global coverage during the second half of the decade.
- Web site: beidou.gov.cn

- US presented the status of GPS
  - The US policy is to provide continuous worldwide access for peaceful uses, free of direct users charge as well as encourage compatibility and interoperability with other GNSS services and promote transparency in civil service provisioning.
  - 30 healthy satellites are currently operational. Global GPS civil service performance commitment has been met continuously since December 1993.
  - Web site: pnt.gov and gps.gov

- The Russian Federation's GLONASS constellation is now considered complete for operational capability:
  - 24 satellites are currently operational; one more is in flight test batch. The next launch is expected in the end of 2012.
  - In 2014, the modernized satellite glonass-K2 will start to be launched.
  - The new Glonass programme concept was adopted 3rd of March, 2012. It covers 2012-2020.
  - Web site: www.glonass-center.ru

- European Community presented progress with EGNOS (its SBAS) and Galileo:
  - Galileo now have four satellites in orbit.
  - IOV is expected to be confirmed in 2013 after which the constellation will be expanded to 30 satellites with FOC expected in 2020.
  - The GIOVE test satellites launched in 2005 and 2008 are now retired
  - The services to be provided by Galileo include the Open Service, Public Regulated Service, Search and Rescue Service, Commercial Service. Early service for the first three will be provided from 2014.
  - The EGNOS data access service was declared operational in July 2012
  - Web site: ec.europa.eu/galileo

- Japan presented their progress regarding the Quasi Zenith Satellite System (QZSS).
  - The first QZSS satellite Michibiki will be followed by three more and the service will start latest 2018.
  - The Government of Japan has decided to accelerate the deployment of the operational QZSS as expeditiously as possible.
  - In the future a seven satellite constellation shall be completed to enable sustainable positioning.

- India was unfortunately not present.

OTHER ISSUES TO NOTE FROM THE MEETING

There were many other interesting presentations, discussions and decisions at the meeting and the following is an outline of some that the authors found particularly interesting:

- The IGS Multi-GNSS Experiment (IGS M-GEX) is running.
- Navipedia (www.navipedia.org) is an ESA initiative to create a reference website for GNSS. It is free for everyone to use as well as improve through a wiki based approach with quality control through peer-review.

- BIPM has been working on a more rapid turnaround for computation of UTC, which is being referred to as UTC Rapid (UTCr). Routine production of UTCr should start in 2013.
- Canada's GNSS Vision intends to increase national stakeholder engagement as well as make the coordination of Canadian views and international collaboration more efficient.

MEETINGS OF WORKING GROUP D AND ITS TASK FORCES ON GEODETIC AND TIMING REFERENCES

The working group had two meetings during the week. The official report from Working Group D and other Working Groups will be available from the ICG web portal in due course. The main outcomes from the Working Group D were:

- The first key outcome from the meeting was that all System Providers, except India (not present at the meeting) and Russia (waiting approval) have submitted templates on their Geodetic and Timing References. These will now be published on the ICG website as soon as possible.
- The second key outcome is that we noted continuing developments in International Standards Organization (ISO) in relation to Geodetic References within ISO TC 211 and on more formal recognition of ITRS.
- The third key outcome from the meeting was a series of recommendations which were later accepted by the ICG and its Provider's Forum on the following topics:
    - WG-D Recommendation #14 – Interrelationship of the GNSS geodetic references through the International Terrestrial Reference System (ITRS)
    - WG-D Recommendation #15 – Improving the GNSS contribution to the ITRF defining parameters
    - WG-D Recommendation #16 – Information on the works related to the proposed redefinition of UTC
    - WG-D Recommendation #16 – Declaration on the computation of Rapid UTCr.

MEETING OF MEMBERS, ASSOCIATE MEMBERS AND OBSERVERS

The co-chairs of Working Group D took the initiative for a meeting of members, associate members and observers. The main issues discussed were:

- The report from the Providers Forum about the review of the future of ICG. The discussion covered whether recommendations should be binding or not, the need for reports from members, associate member and observers to highlight more the role and effect that ICG has in their respective organisations. There was also discussion about the number of working groups within ICG.
- The ICG includes a Providers Forum and a question that arose was whether there is a need for Users Forum as well to give some more formal structure to user group participation in the ICG. It was clearly noted that focus on the needs of the Providers in ICG has increased while the focus on the users role as e.g. agriculture, mining, transport has decreased. This is also affecting the role that FIG should play in ICG. There are advantages in FIG continuing to represent the interests of surveyors in discussions with the GNSS providers through the ICG but there may be a need to change the level and type of involvement as the work of the ICG evolves over time.

NEXT MEETINGS OF THE ICG

The United Arab Emirates will host ICG-8 in Dubai on the 10-14 November, 2013. EU expressed interest in hosting ICG-9 in Europe in 2014.