IAIN Officers Meeting and General Assembly
October 27th, 2009
Report on ICG Activities

The fourth meeting of the International Committee on GNSS (ICG), organised and hosted by the Government of the Russian Federation took place in St. Petersburg, Russia from 14 to 18 September 2008. IAIN was represented by Elisabeth Klaffenboeck (OVN). The 4th ICG meeting had more than 150 participants (China, Italy, Japan, the European Commission, the European Space Agency, the Russian Federation, the United States and the following international organizations: the Civil Global Positioning System service Interface Committee (CGSIC), the European Position Determination System (EUPOS), the IAG Reference Frame Sub-Commission for Europe (EUREF), the Bureau international des poids et measures (BIPM), the International Federation of Surveyors (FIG), the International Association of Geodesy (IAG), the International Earth Rotation Service (IERS), the International Association of Institutes of Navigation (IAIN), the International GNSS Service (IGS), the United Nations Office for Outer Space Affairs (UNOOSA) and the International Civil Aviation Organization (ICAO). The representatives of the International Civil Aviation Organization (ICAO), the UN-affiliated Regional Centres for Space Science and Technology Education located in Mexico, Brazil, Morocco and Nigeria, and Space Generation Advisory Council attended the Meeting.

The following members of the Providers Forum were present at the meeting: China, Japan, the European Community, the Russian Federation and the United States
- China: Compass/BeiDou Navigation Satellite System (CNSS)
- European Union: GALILEO and EGNOS
- Japan: QZSS and MSAS
- Russian Federation: GLONASS and Wide-Area SDCM
- United States: GPS and WAAS

In the frame of the ICG meeting, several meetings of the Providers Forum and of each working group took place:

WG A: Compatibility and Interoperability of GNSS

The following recommendations have been approved by ICG:

- The workplan has been revised as follows: The revised workplan for WG-A maintains a focus on compatibility and interoperability and adds the following areas of work: Open service information sharing, Service performance sharing, Service performance monitoring, Spectrum protection – Interference detection and mitigation.
- WG-A will convene at least two meetings and/or workshops prior to ICG-5.
- The ICG adopted the principle of transparency, that every GNSS provider should publish documentation that describes the signal and system information, the policies of provision and the minimum level of performance offered for its open services.
- ICG endorsed the implementation of a multi-GNSS demonstration campaign (proposed by JAXA, Japan) and encourages the participation
by all providers. It is expected to contribute to the ICG activity defining interoperability among GNSS systems.

- WG-A will continue the process of surveying industry and user community experts regarding GNSS interoperability through a revised questionnaire and additional workshops (two meetings were held in 2009).

WG B: Enhancement of the Performance of GNSS services

- The workplan has been revised as follows: Item B1 (....) has been cancelled from the workplan, the following areas of work have been added: Problem of multipath mitigation and compensation methods activities, extension of GNSS services to in-door navigation, Extension of GNSS SIS performance wireless-lane, follow up closely the different initiatives that are being undertaken at the international level to characterize the ionosphere during the next period of maximum solar activity (2010 onwards) with a view to develop further the knowledge of the ionospheric phenomena and its impact on GNSS.

WG C: Information Dissemination and Capacity-Building

- The workplan has been revised and focus on the following actions:
  - Training for Capacity Building in Developing Countries: Establish and support education and training programmes related to satellite navigation and location-based services for purpose of capacity building in Developing Countries through the regional centres for space science and technology education affiliated to the United Nations and other centres of excellence (Development of education curriculum, e-learning based mode of knowledge transfer, list of relevant textbooks on GNSS).
  - Promoting the Use of GNSS Technologies as Tools for Scientific Applications: Implementation of a training programme for the end users in various disciplines and to provide a forum for exchanges among scientist and organizers of networks of instruments.
  - International Space Weather Initiative: Support the establishment of ground-based world wide instrument arrays for exploring atmospheric phenomena related to space weather and climate change.
  - Regional Workshops on Applications of GNSS in particular in developing countries.

WG D: Interaction with national and regional authorities and relevant international organizations (the name will be changed in the near future)

- WG-D successfully initiated the work of its Task Forces (Geodetic Reference Task Force and the Time System Task Force) to develop processes to align and maintain Geodetic and timing References, which are fundamentals to interoperability of GNSS users. Furthermore WG-D elaborated on further development of regional reference systems and frames to support the ITRF (International Terrestrial Reference Frame), on the definition of UTC (current problem: leap second) and the adoption on a common TRFS. In the near future, the group will
document the details about geodetic and timing references, their maintenance and alignment. In addition WG-D will support the multi-GNSS demonstration campaign (WG-A) and actively encourage participation and contribution from: GNSS providers, International Organisations related to GNSS, Government agencies and international organizations related to GNSS utilisation in Asia and Oceania region, Industries, Universities and research institutes.

ICG will hold its next meeting in Turin, from 18 to 22 October 2010 (organized by Italy and the European Community, Preparatory meetings in February and June in Vienna).

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7th October 2009