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## Report of Working Group C: Information Dissemination and Capacity Building

1. The Working Group C on Information Dissemination and Capacity Building held its third meeting in Saint Petersburg, Russian Federation on 15 September 2009 in conjunction with the Fourth Meeting of the ICG, 14 – 18 September 2009 under the chairmanship of the Office for Outer Space Affairs.
2. The meeting was attended by representatives of China, Italy, Russian Federation, United States, and the following intergovernmental organizations: the International Association of Institutes of Navigation (IAIN), Civil Global Positioning System Service Interface Committee (CGSIC), United Nations-affiliated Regional Centres for Space Science and Technology Education for Africa (Morocco, Nigeria) and for Latin America and the Caribbean (Mexico), and the Space Generation Advisory Council (SGAC).
3. The welcome and opening remarks were made by representatives of the Office for Outer Space Affairs, outlining the work of the Working Group at its current meeting. The activities carried out in 2009 in the framework of the workplan of the Working Group were also highlighted.
4. The programme of the meeting included presentations and comprehensive discussions during which the actions and milestones of a revised workplan for the Working Group were identified. Presentations on education and training highlighted the available capacity-building opportunities supported by national and international institutions.
5. Details of the meeting agenda and the presentations will be available on the International Committee on Global Navigation Satellite Systems (ICG) Information Portal<sup>1</sup>.
6. The Working Group heard the following brief presentations:
  - (a) “Russian experience in satellite navigation distance learning: international cooperation”, by the representative of the Russian Federation;
  - (b) “Global navigation satellite systems: Experience in preparations and improvements of professional skill of specialists in the Bauman Moscow State Technical University”, by the representative of the Russian Federation;
  - (c) “Public organizations’ activity with potential GNSS users”, by the representative of the Russian Federation;
  - (d) “Siberian State Aerospace University named after academician M.F. Reshetnev”, by the representative of the Russian Federation;
  - (e) “Educational tools for GNSS”, by the representative of Italy;
  - (f) “Youth for GNSS and the ICG Working Group C”, by the representative of SGAC.
7. The representatives of the United Nations-affiliated Regional Centres for Space Science and Technology Education for Africa (Morocco and Nigeria) and for Latin America and the Caribbean (Mexico) made statements in which they reviewed the GNSS activities carried out by the Centres during the year 2009.
8. The Working Group noted that adequate support, through the provision of expertise as well as material and financial resources, would be necessary to enable the Regional Centres for Space Science and Technology Education to effectively implement courses on GNSS.

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<sup>1</sup> See [www.icgsecretariat.org](http://www.icgsecretariat.org)

9. The Working Group took note of the information provided by the United States that the Asia Pacific Economic Cooperation (APEC) GNSS Implementation Group (APEC GIT) met in Singapore in 2009. In that regard, the Working Group noted with appreciation of the indication of interest of APEC GIT in establishing a working relation with the ICG, particularly in the area of transportation applications in the Asia Pacific Region. The Working Group further noted that the 14<sup>th</sup> Meeting of the APEC GIT would be held on 21 – 24 June 2010, in Seattle, Washington and that the ICG was invited to present the ICG activities.
10. The Working Group noted the information provided by the Russian Federation on the universities with the distant learning facilities in preparations of the specialists on GNSS. The Working Group took note with appreciation of the proposal for the establishment of the Russian Regional Education Centre to train students and professionals to face real issues and manage satellite navigation data.
11. The Working Group noted the information provided by Italy on NavSAS research group focusing on advanced technologies for GPS/EGNOS/Galileo receivers and applications. The Working Group also noted the importance of the NAVKIT and the SAT-SURF hardware-software tools dedicated to the GNSS students but could be also useful for all the professionals in the field of navigation.
12. The Working Group agreed that the Education Resources webpage of the ICG Information Portal should be kept updated on available education opportunities on GNSS and its applications.
13. The Working Group agreed to establish a group of experts (the educators and the representatives of the UN-affiliated Regional Centres) on GNSS to develop a curriculum on GNSS applications that would supplement other education curricula in space science and technology<sup>2</sup>.
14. The Working Group recalled that SGAC had already established cooperation with the Office for Outer Space Affairs and initiated the project entitled “Youth for GNSS (YGNSS)” focusing on providing GNSS education globally. The Working Group agreed that the mission and efforts of this project is closely aligned to the Working Group’s activities in maximizing the benefits of the use and applications of GNSS in support of sustainable development, particularly in developing countries. It was noted that as a key representative of the next generation of GNSS providers, manufacturers and users, the SGAC would be a vital link in this process.
15. The Working Group reviewed the status of all past Working Group actions and the work being undertaken by the Office for Outer Space Affairs under the Programme on GNSS as a basis for revising the Working Group’s workplan.
16. On the basis of the deliberations, the Working Group agreed on an updated workplan (see Attachment 1). It was also agreed to request the ICG and Providers’ Forum to consider outreaching to the nations to promote their space segments.

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<sup>2</sup> See <http://www.unoosa.org/oosa/en/SAP/centres/index.html>

## **ATTACHMENT 1**

### **Updated Work Plan of the International Committee on Global Navigation Satellite Systems Working Group C**

#### **WORKING GROUP C – Information Dissemination and Capacity Building [Lead, the United Nations Office for Outer Space Affairs]**

##### **Introduction**

Efforts to build capacity in space science and global navigation satellite systems (GNSS) technology are considered a major focus of the Office for Outer Space Affairs and are of specific interest to ICG. Such efforts should aim to provide support to the regional centres for space science and technology education affiliated to the United Nations, which would also act as ICG information centres, to foster a more structured approach to information exchange in order to fulfil the mutual expectations of a network linking ICG and the regional centres; and to connect the institutions involved or interested in GNSS applications with GNSS system providers. The regional centres for Africa are located in Morocco and Nigeria; for Latin America and the Caribbean, in Brazil and Mexico; and for Asia and the Pacific, in India. Therefore, the Office for Outer Space Affairs will lead the working group and ensure that the work is carried out, milestones are reached and deliverables are met. As work of the working group proceeds, additional UN entities, institutions or organizations may join, thus ensuring wider participation.

The workplan consists of 4 actions and it consolidates ICG activities implemented as part of the workplan approved at the first meeting of ICG in 2006 (A/AC.105/879, annex 1, ICG/WP/NOV2006).

##### **Training for Capacity Building in Developing Countries**

Action C1: Establish and support education and training programmes related to satellite navigation and location-based services for purposes of building capacity in developing countries through the regional centres for space science and technology education affiliated to the United Nations and other centres of excellence. This will consolidate the regional centres as ICG information centres and lead to the development of a GNSS education curriculum. In addition, update and maintain the ICG information portal's education-focused page to incorporate e-learning based mode of knowledge transfer and a list of relevant textbooks on GNSS in English and other languages.

##### **Promoting the Use of GNSS Technologies as Tools for Scientific Applications**

Action C2: Promote the use of GNSS technologies as tools for scientific applications in developing countries, with emphasis on Africa. This action will lead to the development and implementation of a training programme for the end users in various disciplines, such as geodesy, geophysics, space weather and meteorology, and to provide a forum for exchanges among scientists and organizers of networks of instruments.

##### **International Space Weather Initiative**

Action C3: Build upon the International Space Weather Initiative (ISWI) and support the establishment of ground-based world-wide instrument arrays for exploring atmospheric phenomena related to space weather and climate change. The initiative is to address all aspects

of the response of the mid- and low-latitude ionosphere to magnetic storms and space weather effects of such storms, including *in situ* and ground-based observations as well as modelling and theoretical studies.

### **Regional Workshops on Applications of GNSS**

Action C4: Organize a series of workshops focusing on capacity-building in the use of GNSS in various areas of applications that support sustainable development, in particular in developing countries.

**Attachment I**

**Recommendation for Committee Decision**

**Prepared by:** Working Group C

**Date of Submission:** 09/17/09

**Issue Title:** Updated Work Plan for Working Group C

**Background/Brief Description of the Issue:**

The workplan consists of the following 4 actions: (1) training for capacity building in developing countries; (2) promoting the use of GNSS technologies as tools for scientific applications; (3) international space weather initiative; (4) regional workshops on the applications of GNSS.

**Discussion/Analyses:**

The revised workplan for WG-C maintains a focus on providing support for education and training in satellite navigation and location-based services for purposes of building capacity in developing nations through the regional centres for space science and technology education affiliated to the United Nations and organizing the workshops and special sessions on the use of GNSS technologies as tools for scientific applications.

**Recommendation of Committee Action:**

The ICG should adopt the work plan for WG-C and consider outreaching to the nations to promote their space segments.