



Office for Outer Space Affairs
United Nations Office at Vienna



International Committee on
Global Navigation Satellite Systems

**The United Nations Affiliated Regional Centres for Space and
Technology Education
and
ICG Information Centres**

37th COSPAR Scientific Assembly

Montreal, Canada

13 – 20 July 2008



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Outline of the Presentation

- I. UN OOSA, UNISPACE III
- II. UNISPACE III: Action Team on GNSS
- III. International Committee on GNSS (ICG)
- IV. UN-affiliated Regional Centres for Space Science and Technology Education
- V. Education and Capacity Building in the Use of GNSS Technologies
- VI. ICG Information Centres



I. UN Office for Outer Space Affairs

- ◆ **Mandated by the Fourth Committee of the UN General Assembly (UN GA) and the Committee on the Peaceful Uses of Outer Space (UN COPUOS) and its subsidiary bodies: Scientific and Technical Subcommittee and Legal Subcommittee**
- ◆ **COPUOS reports annually to Fourth Committee of the United Nations General Assembly, which annually adopts a GA resolution on “International cooperation in the peaceful uses of outer space”**
- ◆ **Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III), 1999: “The Space Millennium: Vienna Declaration on Space and Human Development”**
 - ◆ **Recommendation concerning GNSS:**

“...to improve the efficiency and security of transport, search and rescue, geodesy and other activities by promoting the enhancement of, universal access to and compatibility of space-based navigation and positioning systems”
 - ◆ **12 Action Teams established by UN COPUOS under voluntary leadership by Member States**
 - ◆ **GNSS Action Team co-chaired by the United States and Italy**



II. Action Team GNSS: 2001 - 2004

- ◆ **UN/USA Regional Workshops with system providers, augmentation system providers, and user community**
 - ◆ **2001: Malaysia (ESCAP) and Austria (ECE)**
 - ◆ **2002: Chile (ECLAC) and Zambia (ECA)**
- ◆ **UN/USA International Meetings: 2002 – 2004**
 - ◆ **Action Team concluded**
 - ◆ **ICG Terms of Reference and Workplan**
 - ◆ **Follow-up projects/initiatives on GNSS applications**
 - ◆ **AFREF, SIRGAS, EUPOS, EUREF, APRGP, PCGIAP**

**Building a system of systems through the
short-term
“Action Team”**

**to a long term
“International Committee on Global Navigation Satellite Systems”
(ICG)**



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Establishment of the ICG as reflected by

The United Nations General Assembly,

in its resolution 61/111 of 14 December 2006,

“...noted with appreciation that the International Committee on Global Navigation Satellite Systems had been established on a voluntary basis as an informal body to promote cooperation, as appropriate, on matters of mutual interest related to civil satellite-based positioning, navigation, timing and value-added services, as well as the compatibility and interoperability of global navigation satellite systems, while increasing their use to support sustainable development, particularly in developing countries”

International Committee on Global Navigation Satellite Systems (ICG)

A forum to discuss Global Navigation Satellite Systems (GNSS) to benefit people around the world



III. International Committee on Global Navigation Satellite Systems (ICG)

- ◆ **ICG Membership: Members, Associate Members and Observers**
- ◆ **ICG Secretariat: UN OOSA**

ICG participation is open to all countries and entities that are either GNSS providers or users of GNSS services, and are interested and willing to actively engage in ICG activities

- ◆ **First Meeting of the ICG, UNOV, Vienna, Austria: 2006**
 - ◆ **Workplan**
 - ◆ **Compatibility and Interoperability**
 - ◆ **Enhancement of performance of GNSS services**
 - ◆ **Information dissemination (UN OOSA)**
 - ◆ **Interaction with international organizations, national, and regional authorities**
 - ◆ **Coordination among service providers**
- ◆ **Second Meeting of the ICG, ISRO, Bangalore, India: 2007**
 - ◆ **Within the ICG is the Providers' Forum, consisting of those countries operating GNSS systems or with plans to develop one. The Forum provides a venue for coordination and cooperation to improve overall service provision**
- ◆ **Third Meeting of the ICG, JPL, Pasadena, USA: 8 – 12 December 2008**
- ◆ **Fourth Meeting of the ICG, Roscosmos, Russian Federation: 2009**



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IV. UN-affiliated Regional Centres for Space Science and Technology Education (cont.)

Goal: to develop, through in-depth education, an indigenous capability for research and applications in the core disciplines of:

- ◆ Remote Sensing and GIS
- ◆ Satellite Communications
- ◆ Satellite Meteorology and Global Climate
- ◆ Space and Atmospheric Science as well as data management

Postgraduate courses are based on education curricula developed through UN expert meetings with the support of the prominent educators in 1989, 1995 and 2001

Regional Centres located in:

- ◆ Africa: CRASTE-LF (Morocco), AECSSTE-E (Nigeria)
- ◆ Asia and the Pacific: CSSTEAP (India)
- ◆ Latin America and the Caribbean CRCTEALC (Brazil, Mexico)



CRASTE-LF



CRECTEALC



ARCSTE-E, OAU CAMPUS, ILE-IFE



CSSTEAP



V. Education and Capacity Building in the Use of GNSS Technologies

2008:

- ◆ 12th International Symposium on Equatorial Aeronomy (ISEA-12): Session on GPS applications, 18 – 24 May 2008, Crete, Greece
 - ◆ Scintillation Network Decision Aid: SCINDA
 - ◆ SCINDA and the Low-latitude Ionospheric Sensor (LISN) network
 - ◆ **GPS Africa**
- ◆ AFREF Steering Committee Meeting and Arica Array Meeting: Session on coordinating GPS and “Geo” instrumentation in Africa, 17 – 20 June 2008, Johannesburg, South Africa
 - ◆ “Geo-science” instruments in Africa (GPS Africa): African Array, AFREF, IHY projects, atmospheric monitoring of water vapor, space weather observations
 - ◆ **Standards, communication of data policies to maximize the benefits of the networks**
- ◆ International Training Course on Satellite Navigation and Location Based Services, CSSTEAP, 18 June – 18 July 2008, Ahmedabad, India
 - ◆ **Initiating development of the GNSS Education Curriculum**
 - ◆ **ICG Information Centre**



V. Education and Capacity Building in the Use of GNSS Technologies (cont.)

2008:

- ◆ UN/Colombia/USA Workshop on the Applications of GNSS, 23 – 27 June 2008, Medellin, Colombia
 - ◆ Sistema de Referencia Geocéntrico para las Américas (SIRGAS)
 - ◆ Transportation
 - ◆ Surveying, mapping and Earth Science
 - ◆ Management of natural resources, the environment and disasters
 - ◆ Education and GNSS knowledge map: GNSS-related bibliographic data base
 - ◆ Tele-health and landscape epidemiology
- ◆ ICG Expert Meeting on GNSS Systems and Services, 37th COSPAR Scientific Assembly, 13 – 20 July 2008, Montreal, Canada
 - ◆ ICG workplan and Working group overviews
 - ◆ Overview of GNSS systems
 - ◆ Compatibility and Interoperability at the User Equipment Level
- ◆ ION GNSS 2008 Conference: 21st International Technical Meeting of the Satellite Division of the Institute of Navigation, Panel Discussion on Global Influences of Global Navigation Satellite Systems, 15 – 19 September 2008, Savannah, Georgia, USA



V. Education and Capacity Building in the Use of GNSS Technologies (cont.)

◆ Information Dissemination

- ◆ Munich Satellite Navigation Summit “Towards a GNSS System of Systems”, 19 – 21 February 2008, Munich, Germany
- ◆ 45th Session of the Scientific and Technical Subcommittee of COPUOS, 11- 22 February 2008, Vienna, Austria
- ◆ International Satellite Navigation Forum 2008, 7 – 8 April 2008, Moscow, Russian Federation
- ◆ **International Symposium on GNSS, Space-based and Ground-based Augmentation Systems and applications, 11-14 November 2008, Berlin, Germany**

2009: Cooperation with Regional GNSS Reference Systems

ECLAC:	SIRGAS
ECA:	AFREF
ESCAP:	APRGP and PCGIAP
ECE:	EUPOS and EUREF



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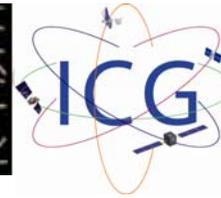
VI. ICG Information Centres

Aim: to foster a more structured approach to information exchange in order to fulfill the reciprocal expectations of a network between ICG and Regional Centres

- ◆ **ICG Information Portal**
- ◆ **Posters, brochures, reports**
- ◆ **GNSS knowledge map**
- ◆ **Structured Communication**
 - ◆ **Sub-networks of the Regional Centres, establishing a network of nodes on a regional basis**
 - ◆ **Local users of GNSS applications/technology, giving the opportunity to establish new partnerships**



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