

# **International Committee on Global Navigation Satellite Systems**

**19 January 2007**

**Inter-Agency Meeting on Outer Space Activities  
Open Informal Session**

**Vienna, Austria**

# UN Office for Outer Space Affairs

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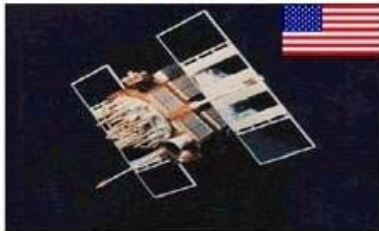
- ◆ **Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III)**
  - ◆ **1999 UNISPACE III: The Space Millennium - Vienna Declaration on Space and Human Development**
  - ◆ **2001: Action Teams established by COPUOS under voluntary leadership by Member States**
  - ◆ **2004 UNISPACE III+5 Plan of Action contained in the report of COPUOS to the UNGA on the review of the implementation of the recommendations of UNISPACE III and endorsed by the UNGA**

# Global Navigation Satellite Systems and Augmentation Systems

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## Operating Global Navigation Satellite Systems (GNSS)

GPS



GLONASS



GALILEO



- ◆ USA's GPS Modernisation and ultimately GPS-III (+ WAAS)
- ◆ Russia's GLONASS Re-vitalisation
- ◆ EU's Galileo (+ EGNOS)
- ◆ Japan's QZSS/MSAS
- ◆ India's GAGAN/INRSS
- ◆ China's Compass

# UNISPACE III: 1999, Vienna, Austria

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- ◆ **“The Space Millennium: Vienna Declaration on Space and Human Development” (Vienna Declaration)**

- ◆ **GNSS related recommendation:**

**“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”**

# Action Team GNSS: Establishment in 2001

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- ◆ **12 Action Teams were established by UN Committee on the Peaceful Uses of Outer Space (COPUOS)**

Action Team Nr. 1 (Environmental Monitoring Strategy); Action Team Nr. 2 (Management of Natural Resources) Action Team Nr. 4 (Weather and climate monitoring) Action Team Nr. 6 (Public health) Action Team Nr. 7 (Disaster management)	Action Team Nr. 9 (Knowledge-sharing) <b>Action Team Nr. 10 (GNSS)</b> Action Team Nr. 11 (Sustainable Development) Action Team Nr. 14 (Near-Earth objects) Action Team Nr. 17 (Capacity building) Action Team Nr. 18 (Awareness increase) Action Team Nr. 32 (Innovative funding sources)
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- ◆ **Recommendations that have been assigned highest priority by Member States of the United Nations**
- ◆ **GNSS Action Team co-chaired by the United States and Italy**
- ◆ **GNSS applications/coordination: Regionally, Internationally**

# Action Team GNSS: Membership

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- ◆ **38 countries**

Australia	Colombia	Iraq	Nigeria	Russian Federation
Austria	Czech rep.	Italy	Pakistan	Saudi Arabia
Belarus	Egypt	Japan	Philippines	Syria
Brazil	France	Lebanon	Poland	Turkey
Bulgaria	Germany	Malaysia	Portugal	Ukraine
Canada	Hungary	Mexico	Rep. of Korea	United States of America
Chile	India	Mongolia	Romania	Zambia
China	Iran	Morocco		

- ◆ **15 organizations**
- ◆ **3 UN system entities: ESCAP, ICAO, ITU**
- ◆ **4 IGOs: ESA, European Commission, Eurocontrol, BIPM**
- ◆ **8NGOs: CGSIC, EURISY, AIAA, IAG, IAIN, ICA, FIG, IGS**

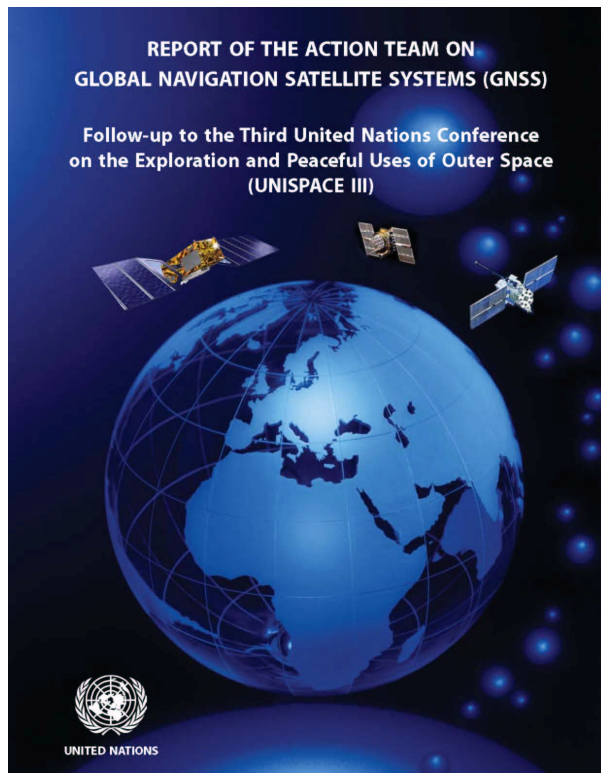
# Action Team GNSS: Working Groups

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- ◆ **Five Thematic Areas**
  - ◆ **Surveying, mapping, and Earth sciences**
  - ◆ **Agriculture and management of natural resources**
  - ◆ **Environmental monitoring and management**
  - ◆ **Transportation**
  - ◆ **Education and training, awareness increase**

# Action Team GNSS: 2001-2004

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- ◆ Use of GNSS for applications such as disaster warning and emergency response, aviation, maritime and land transportation, mapping and surveying, agriculture, power and telecommunication networks, and geographic information systems
  
- ◆ Regional workshops and international meetings with:
  - ◆ system providers;
  - ◆ augmentation system providers, and users

**2001: Malaysia (ESCAP) and Austria (ECE)**

**2002: Chile (ECLAC) and Zambia (ECA)**



## **Action Team GNSS: Main Findings**

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- ◆ **Coordination mechanism involving operators of GNSS and their augmentations, as well as appropriate international organizations;**
- ◆ **Integration of GNSS into the basic infrastructure (government, commercial and scientific) of countries, particularly in the developing world;**
- ◆ **Establish mechanisms for identifying and eliminating sources of interference that could degrade signals from GNSS and their augmentations**

**Moving from a  
short-term  
“Action Team”  
to a  
Long-term  
“International Committee on GNSS”  
(ICG)**

# **UN/USA International Meetings on the Use and Applications of GNSS**

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- ◆ 2002
- ◆ 2003
- ◆ 2004
  - ◆ Action Team concluded (Report)
  - ◆ ICG Terms of Reference (Draft)
  - ◆ ICG Work Plan (Draft)
  - ◆ GNSS/ICG Web Information Portal (Draft)
  - ◆ Follow-up projects/initiatives on GNSS applications (21)
  - ◆ UN/Italy Long-term fellowship programme GNSS
  - ◆ AFREF, SIRGAS, EUPOS, ...
  
- ◆ UNISPACE III + 5: : Review of the implementation of the recommendations of UNISPACE III (UN GA Res. 59/2, para 11)



- ◆ **Meetings of the Action Team (2001-2004) and Establishment of the International Committee on GNSS (2005) have been facilitated by the UN Office for Outer Space Affairs**

# First Meeting of the ICG: 2006

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## ◆ ICG: Terms of Reference

### Objectives:

- ◆ Encourage coordination among providers of GNSS core systems and augmentations in order to ensure greater compatibility and interoperability;
- ◆ Encourage and promote the introduction and utilization of satellite positioning, navigation, and timing services, particularly in the developing countries, through assistance with the integration of GNSS services into their infrastructures;
- ◆ Report periodically on its activities to UNCOPUOS

# First Meeting of the ICG: 2006

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## ICG: Terms of Reference

### Participants

- ◆ (a) Members:
  - ◆ Current and future core system providers including, European Community (Galileo), Russian Federation (Glonass), and United States (GPS);
  - ◆ Member States of the UN with an active programme in implementing or promoting a wide range of GNSS services and applications (Italy);
  - ◆ Current and future regional or augmentation system providers including, China (Compass), ESA (EGNOS), India (GAGAN/INRSS), Japan (MSAS/QZSS), Nigeria (NigComsat-1 SBAS), US (WAAS), and other compatible ground-based systems;
- ◆ (b) Associate Members:
  - ◆ International and regional organizations and associations dealing with GNSS services and applications including, UNOOSA, CGSIC, IAG, ICA, IGS, ISPRS, IERS, FIG, EUPOS, ICSU;
- ◆ (c) Observers:
  - ◆ COSPAR, BIPM, IAIN, URSI, ITU

# First Meeting of the ICG: 2006

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## ICG: Work Plan

- ◆ (a) Compatibility and Interoperability;
- ◆ (b) Enhancement of performance of GNSS services
- ◆ (c) Information Dissemination
- ◆ (d) Interaction with National and Regional Authorities and Relevant International Organizations
- ◆ (e) Coordination

All participants will cooperate, as appropriate, on matters of mutual Interest related to civil satellite-based positioning, navigation, timing, and value-added services

# First Meeting of the ICG: 2006

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## ICG: Work Plan

### Information Dissemination

- ◆ ICG Information portal, including a calendar of GNSS related events
- ◆ Identify undergraduate and graduate courses on GNSS
- ◆ Disseminate a list of relevant textbooks on GNSS in English and other languages
- ◆ Use of the Regional Centres for Space Science and Technology Education, affiliated to the United Nations to promote GNSS use and applications
- ◆ Develop a proposal for further mechanisms to promote the applications of GNSS



# First Meeting of the ICG: 2006

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- ◆ **ICG: Conclusions**

- ◆ **The ICG adopted its Terms of Reference and Work Plan**
- ◆ **A proposal to establish a “Providers Forum” to enhance compatibility and interoperability among current and future global and regional satellite-based systems was noted**

# **UNGA and GNSS/ICG**

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**The United Nations General Assembly,  
in its resolution 61/111 of 14 December 2006**

**“Notes with appreciation that  
the International Committee on  
Global Navigation Satellite Systems was 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”**

# CONCLUSION

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- ◆ **GNSS has universal application to activities undertaken by UN specialized agencies**
- ◆ **ICG would welcome input from the IAM on what it could do to support UN System use of GNSS**