

## ***Programme on Global Navigation Satellite Systems (GNSS) Applications***

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Office for Outer Space Affairs  
United Nations Office at Vienna

***Fifth Meeting of the ICG  
18 – 22 October 2010***

***Turin, Italy***

## *Outline*

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- ◆ **United Nations Office for Outer Space Affairs (UNOOSA)**
- ◆ **Programme on GNSS Applications: Information Dissemination and Capacity Building**
- ◆ **ICG Executive Secretariat**

## ***United Nations Office for Outer Space Affairs (UNOOSA)***

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- ◆ **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**
  - ◆ **Legal Subcommittee**
  
- ◆ **UN COPUOS reports annually to the Fourth Committee of the UN GA, which annually adopts a **GA resolution on****  
**“International cooperation in the peaceful uses of outer space”**

## ***United Nations Office for Outer Space Affairs (UNOOSA)***

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- ◆ **2008: The Scientific and Technical Subcommittee had considered recent developments in Global Navigation Satellite Systems (GNSS) as a new and regular agenda item**
- ◆ **2009: UN COPUOS noted with appreciation that ICG continued to make a significant progress towards achieving compatibility and interoperability among global and regional space-based positioning, navigation and timing systems and in promoting the use of GNSS and their integration into national infrastructures, particularly in developing countries**
- ◆ **2010: UN COPUOS began consideration of a new agenda item under a three-year work plan on the International Space Weather Initiative (ISWI) with a specific focus on the effects of space weather on the Earth and its impact on, inter alia, communications and transport**

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- I. Training for capacity building in developing countries: *provide support to the regional centres for space science and technology education, affiliated to the United Nations, which also act as the ICG Information Centres***
- ◆ **To develop an in-depth GNSS curriculum for introduction at all the regional centres and other institutions of higher-level education**
    - ◆ **Regional Centres are located in: Morocco and Nigeria for Africa, Brazil and Mexico for Latin America and the Caribbean, and India for Asia and the Pacific**
  - ◆ **To establish and strengthen networks in the regions for exchange of information**
  - ◆ **UN/Italy Long Term Fellowship Programme on GNSS and Related Applications, Master in GNSS and Related Applications (MNA), Politecnico di Torino, Italy**
  - ◆ **UN Training Course on Satellite Navigation and Location Based Services, at the African Regional Centre for Space Science and Technology Education in English language (ARCSSTE-E), Ile-Ife, Nigeria, 4 – 29 October 2010**

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### **II. Promoting the use of GNSS technologies as tools for scientific applications in developing countries: *development and implementation of a training programme for the end users in various disciplines, such as a geodesy, geophysics, space weather and meteorology***

- ◆ **To provide a forum for exchanges among scientists and organizers of networks of instruments**
  - ◆ **Standards, communication of data policies to maximize the benefits of the networks**
  
- ◆ **Second Workshop on Satellite Navigation Science and Technology for Africa, 6 – 23 April 2010, the Abdus Salam International Centre for Theoretical Physics, Trieste, Italy**

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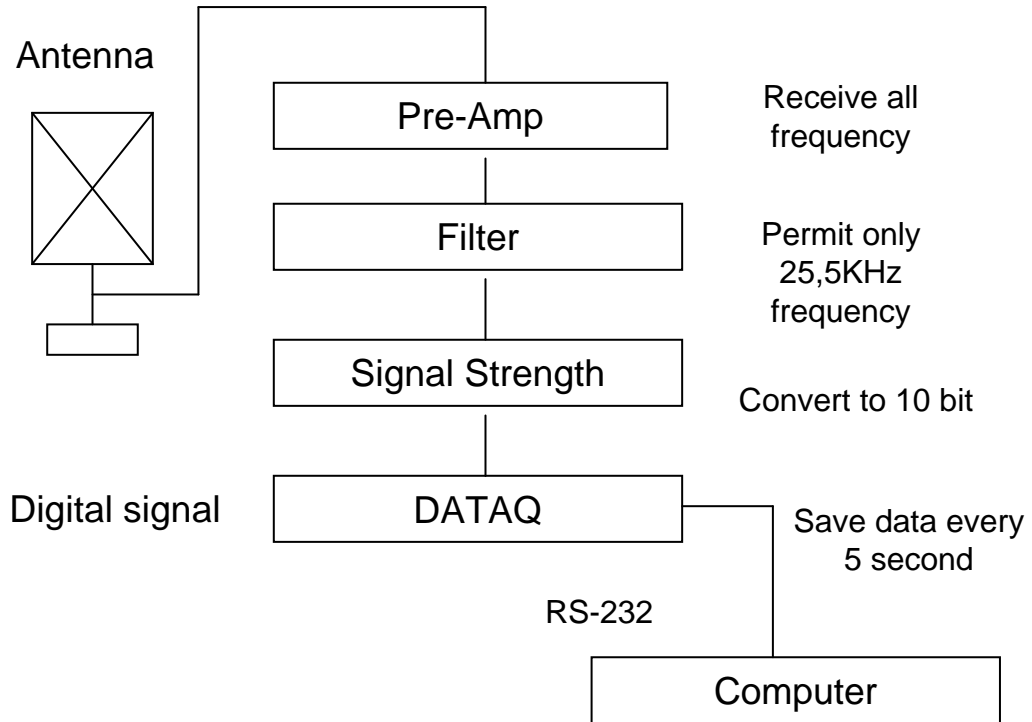
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### **III. International Space Weather Initiative: *Develop the scientific insight necessary to understand the science, and to forecast near-Earth space weather***

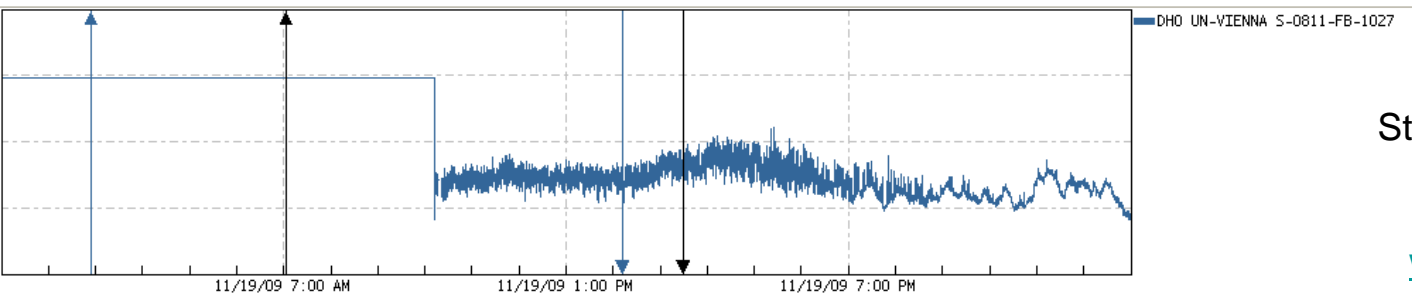
- ◆ **Instrumentation and data analysis**
  - ◆ **Expand and continue deployment of new and existing instrument arrays**
  - ◆ **Expand data analysis effort for instrument arrays and existing data bases**
  
- ◆ **UN/JAXA/NASA Workshop on International Space Weather Initiative (ISWI), Luxor, Egypt, 6 – 10 November, 2010**
  
- ◆ **AWESOME (Atmospheric Weather Educational System for Observation and Modeling of Effects)/SIDs (Sudden Ionospheric Disturbance) monitors, USA**



# Sudden Ionospheric Disturbance Monitor (SID) operated by UNOOSA



Principle of SID monitor



Stanford Solar Centre

SID Data Access

[www.stanford.edu](http://www.stanford.edu)



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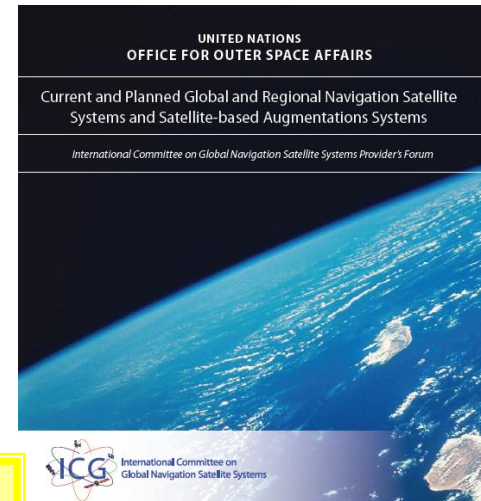
### **IV. Regional Workshops on the Applications of GNSS: *increase awareness among decision and policy makers of the benefits of GNSS and develop regional and national pilot projects on GNSS applications***

- ◆ **Develop a regional plan of action that would contribute to wider use of GNSS technology and applications and scientific exploration perspectives**
- ◆ **UN/Moldova/USA Workshop on GNSS, 17 – 21 May 2010, Chisinau**
- ◆ **20<sup>th</sup> UN International Astronautical Federation Workshop on GNSS Applications for Human Benefit and Development, as an associated event of the 61<sup>st</sup> International Astronautical Congress, 24 – 25 September 2010, Prague, Czech Republic**
  - ◆ **ICG could help to increase awareness of the benefits of GNSS applications through international forums;**
  - ◆ **Outreach activities should be continued through ICG, especially for those countries where the benefits of GNSS applications have not yet resulted in the systematic application of GNSS for advancement of their societies;**
  - ◆ **Necessity of standardization of GNSS reference documents should be addressed by ICG**
- ◆ **United Nations/United Arab Emirates/United States of America Workshop on GNSS Applications, 16 – 20 January 2011, Dubai**

## ***UNOOSA: ICG Executive Secretariat***

- ◆ ***Asia Oceania Regional Workshop on GNSS, Bangkok, Thailand, 25 – 26 January***
- ◆ ***Munich Satellite Navigation Summit 2010, Munich, Germany, 9 – 11 March***
- ◆ ***Fourth International Satellite Navigation Forum, Moscow, RF, 1 – 2 June***
- ◆ ***Asia Pacific Economic Cooperation (APEC) 14<sup>th</sup> meeting of the GNSS implementation team, Seattle, USA, 21 – 24 June***
- ◆ ***Second ESA GNSS Education Workshop, Madrid, Spain, 15 – 16 July***
- ◆ ***Third Vulnerabilities and Solutions Conference, Baska, Croatia, 5 – 8 September***

**ICG Information Portal: <http://www.icgsecretariat.org>**



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