



UNITED NATIONS
Office for Outer Space Affairs

**United Nations International Meeting on the
Applications of Global Navigation Satellite Systems**

Vienna, 12 – 16 December 2011

Vienna International Centre, Conference Room M2

PROGRAMME

Monday, 12 December 2011

08:00 - 10:00 Registration (*Pass Office, Gate 1, Vienna International Centre*)

10:00 Opening and Welcome Remarks

- *Ms. Mazlan Othman, Director, United Nations Office for Outer Space Affairs*
- *Mr. Kenneth Hodgkins, Co-chair of the Action Team on GNSS, United States of America*

Objectives of the Meeting, *Ms. Sharafat Gadimova, United Nations Office for Outer Space Affairs*

- *United Nations Programme on Global Navigation Satellite Systems Applications, Ms. Sharafat GADIMOVA, United Nations Office for Outer Space Affairs*

11:00 *Coffee Break*

11:30 Presentation Session 1: Policies and strategies for promoting sustainable development

Chairperson: Mr. Alexandru BADEA, Romania

Rapporteur: Ms. Ferdaous CHAABANE, Tunisia

- 11:30 ▪ Global Positioning System (GPS), *Mr. Hank SKALSKI, United States of America*
- 11:50 ▪ GLObal NAVigation Satellite System (GLONASS) status and modernization, *Ms. Ekaterina OLEYNIK, Russian Federation*
- 12:10 ▪ GALILEO/EGNOS System Update, *Mr. Rafael LUCAS RODRIGUEZ, European Space Agency*
- 12:30 ▪ BeiDou System update, *Mr. Weiguang GAO, China*
- 12:50 ▪ Indian Regional Navigation Satellite Systems (IRNSS) overview, *Mr. Anand DWIVEDI, India*
- 13:10 ▪ Quazi-Zenith Satellite System (QZSS), *Mr. Satoshi KOGURE, Japan*

13:30 *Lunch Break*

14:30 Presentation Session 2: International initiatives/experiences

Chairperson: Mr. Chalermcho SATIROPOD, Thailand

Rapporteur: Mr. Thomas STANSELL, United States of America

- 14:30 ▪ The Current status of the RNSS systems and ITU-R Recommendations, *Mr. Attila MATAS, International Telecommunication Union*
- 14:50 ▪ Satellite navigation applications realizing global challenges and ambitions, *Mr. Mr. Luis CHOCANO, Spain (on behalf of Ms. Axelle Marie-Pierre POMIES, France)*
- 15:10 ▪ iGMAS and the BeiDou/GNSS Application Demonstration and Experience Campaign, *Mr. Xurong DONG, China*
- 15:30 ▪ The International GNSS Service – A component of Global Geodetic Observing System, *Ms. Ruth NEILAN, International GNSS Service*
- 15:50 ▪ Multi-GNSS Demonstration Campaign in Asia Oceania region, *Mr. Akio YASUDA, Japan*

16:10 *Coffee Break*

16:40 Panel Discussion 1: Building Upon the Results of the Regional Workshops/Training Courses

Moderators: Ms. Sharafat Gadimova and Mr. Hans Haubold, United Nations Office for Outer Space Affairs

Rapporteur: Mr. Donnay Nahimana, Burundi

- Assess the practical benefits of the follow-up actions resulting from the international meetings/regional workshops/training courses and their contribution to capacity-building for sustainable development in the use of enabling space technologies in various rapidly growing fields of science and industry, as well as deploying instruments for the International Space Weather Initiative (ISWI), developing an in-depth GNSS education curriculum for inclusion in the training programmes at all UN-affiliated Regional Centres for Space Science and Technology Education, which also serve as ICG Information Centres.

18:00 *Adjourn*

Tuesday, 13 December 2011

09:30 Presentation Session 3: Regional and national initiatives/experiences

Chairperson: Mr. Salem KAHLOUCHE, Algeria

Rapporteur: Mr. Anand DWIVEDI, India

09:30

- GNSS-EGNOS approaches to European airports, *Mr. Luis CHOCANO, Spain*

09:50

- European Position Determination System Initiative, *Mr. Ivo MILEV, Germany*

10:10

- GNSS curriculum for Master's degree and capacity building at Beihang University, *Mr. Jingnong WENG, China*

10:30

- GEOMED project: objectives, impacts and accomplishments, *Ms. Ferdaous CHAABANE, Tunisia*

10:50

- Towards enhancing the capacities of the Middle-East region in space weather disciplines, *Mr. Ayman MAHROUS, Egypt*

- 11:10 *Coffee Break*
- 11:40 Presentation Session 4: GNSS reference station network and services**
- Chairperson: Mr. Buldan MUSLIM, Indonesia*
- Rapporteur: Mr. Vasili CHIRIAC, Moldova*
- 11:40 ▪ Challenges of regional reference frame implementation, *Mr. Heinz HABRICH, Germany*
- 12:00 ▪ Geocentric datum of Brunei Darrusalam 2009 (GDBD2009), *Mr. Jamil Mohamed ALI, Brunei Darussalam*
- 12:20 ▪ SIRGAS: the achievements 1993 – 2011 and beyond, *Mr. William Alberto MARTINEZ DIAZ, Colombia*
- 12:40 ▪ Philippines active geodetic network: its application to surveying and mapping , *Mr. Ronaldo GATCHALIAN, The Philippines*
- 13:00 *Lunch Break*
- 14:30 Presentation Session 4: GNSS reference station network and services (continues)**
- Chairperson: Mr. Ivo MILEV, Germany*
- Rapporteur: Mr. Janis KAMINSKIS, Latvia*
- 14:30 ▪ Spatial data quality improvement with GNSS base station system LatPos, *Mr. Janis ZVIRGZDS, Latvia*
- 14:50 ▪ Development of geodetic databases for MoldPos services, *Mr. Vasile CHIRIAC, Moldova*
- 15:10 ▪ Conceptual framework of CORS network for precise point positioning applications in Pakistan, *Mr. Syed Zahid JAMAL, Pakistan*
- 15:30 ▪ Earth science applications of GNSS, *Mr. Salem KAHLOUCHE, Algeria*

15:50 Q&A

16:00 *Coffee Break*

16:30 Discussion Session 1 (Working Groups sessions in parallel): Proposals/Recommendations

- International/Regional collaboration opportunities that could be established in order to promote the use of enabling space technologies

Working Group 1: ICG members

(Conference Room M0E19)

Chairperson: Mr. Kenneth Hodgkins, Co-chair of the Action Team on GNSS, United States of America

Working Group 2: GNSS Applications and Space Weather Effects on GNSS

(Conference Room M7)

*Co-chair: Mr. Renato FILJAR, Croatia
Co-chair: Ms. Rasheedat ABDULRAHIM, Nigeria*

Working Group 3: Regional Reference Frames/Systems

(Conference Room M0E05)

*Co-chair: Mr. Ivo MILEV, Germany
Co-chair: Mr. Janis ZVIRGZDS, Latvia*

Working Group 4: GNSS Education Curriculum and ICG Information Centres

(Conference Room M0E07)

*Co-chair: Mr. Alexandru BADEA, Romania
Co-chair: Mr. Vasilie CHIRIAC, Moldova*

18:00 *Adjourn*

Wednesday, 14 December 2011

09:30 Presentation Session 5: Space Weather and GNSS

Chairperson: Mr. Noah BROSCHE, Israel

Rapporteur: Mr. Janis ZVIRGZDS, Latvia

09:30

- Raising public awareness of space weather induced effects on GNSS performance and operation in Croatia, *Mr. Renato FILJAR, Croatia*

09:50

- Study of ionospheric perturbations using GNSS ground station and AWESOME VLF data, *Mr. Yusufjon TILLAYEV,*

Uzbekistan

- 10:10 ▪ GNSS applications for space weather monitoring in Indonesia, *Mr. Buldan MUSLIM, Indonesia*
- 10:30 ▪ TEC derived from some GPS stations in Nigeria and comparison with the IRI, *Ms. Rasheedat ABDULRAHIM, Nigeria*

10:50 Q&A

11:00 *Coffee Break*

11:30 Presentation Session 6: Capacity-building, training and education in the field of GNSS

Chairperson: Mr. Tal DEKEL, Israel

Rapporteur: Ms. Rasheedat ABDULRAHIM, Nigeria

- 11:30 ▪ GNSS laboratory research: Academic education and professional advancement, *Mr. Serdjo KOS, Croatia*
- 11:50 ▪ The role of capacity building and training on GNSS in the developing countries, *Mr. Mustapha AMGHAR, Morocco*
- 12:10 ▪ GNSS education and development in the Riga Technical University, *Mr. Janis KAMINSKIS, Latvia*
- 12:30 ▪ G-TRAIN: Supporting education and training in the field of satellite navigation in Europe, *Mr. Olivier JULIEN, France*

12:50 Q&A

13:00 *Lunch Break*

14:30 Presentation Session 7: GNSS-based application areas

Chairperson: Mr. Rafael LUCAS RODRIGUEZ, European Space Agency

Rapporteur: Mr. Mustapha AMGHAR, Morocco

- 14:30 ▪ Active radar observations of meteors and passive detection possibility using GNSS, *Mr. Noah BROSCH, Israel*

- 14:50 ▪ Specialized GNSS applications for engineering professionals based on android tablets, *Mr. Ivo MILEV, Germany*
- 15:10 ▪ GNSS aviation application and programmes, *Mr. Harvey Gabriel LEKAMISY, Madagascar*

15:30 Q&A

16:00 *Coffee Break*

16:30 Discussion Session 2 (Working Groups sessions in parallel): Proposals/Recommendations

- Type and level of training required in the use of enabling space technologies

Working Group 1: ICG members

Working Group 2: GNSS Applications and Space Weather Effects on GNSS

Working Group 3: Regional Reference Frames/Systems

Working Group 4: GNSS Education Curriculum and ICG Information Centres

(Conference Room M0E19)

(Conference Room M7)

(Conference Room M0E05)

(Conference Room M0E07)

Chairperson: Mr. Kenneth Hodgkins, Co-chair of the Action Team on GNSS, United States of America

*Co-chair: Mr. Renato FILJAR, Croatia
Co-chair: Ms. Rasheedat ABDULRAHIM, Nigeria*

*Co-chair: Mr. Ivo MILEV, Germany
Co-chair: Mr. Janis ZVIRGZDS, Latvia*

*Co-chair: Mr. Alexandru BADEA, Romania
Co-chair: Mr. Vasilie CHIRIAC, Moldova*

17:30 *Technical Visit: The permanent space exhibit at the Vienna International Centre*

18:00 *Adjourn*

Thursday, 15 December 2011

09:30 Presentation Session 7: GNSS-based application areas (continues)

Chairperson: Mr. William MARTINEZ DIAZ, Colombia

Rapporteur: Mr. Syed JAMAL, Pakistan

- 09:30 ▪ Using location-based social media for emergency response, *Mr. Tal DEKEL and Mr. Ram LEVI, Israel*
- 09:50 ▪ Vertical motions in greater Bangkok area after the 2004 Sumatran earthquake from GPS observations and its prediction based on the geophysical modelling, *Mr. Chalermchon SATIRAPOD, Thailand*
- 10:10 ▪ GNSS applications for managing informal settlements in Swaziland, *Mr. Sydney SIMELANE, Swaziland*
- 10:30 ▪ Enhancing GNSS accuracy and availability in inter-tropical zone, *Mr. Donnay Fleur NAHIMANA, Burundi*
- 10:50 ▪ GNSS technology in thematic maps development, *Aleksandar RISTIĆ, Serbia*
- 11:10 ▪ Colombian Civil Aviation Authority, *Ms. Nibia Lucia MORALES GALINDO, Colombia*

11:30 *Coffee Break*

11:50 Discussion Panel 2: Regional Centres for Space Science and Technology Education, affiliated to the United Nations as Information Centres for the ICG

Moderators: Ms. Sahrafat Gadimova and Mr. Hans Haubold, United Nations Office for Outer Space Affairs

Rapporteur: Mr. Ronaldo Gatchalian, the Philippines

- The further development of the education centres at the technical level, which might include various GNSS technologies and the cooperative level with possible collaboration with industry leaders and linkages with current and planned system and augmentation system providers

13:00 *Lunch Break*

14:30 Discussion Session 2 (Working Groups sessions in parallel): Proposals/Recommendations

Working Group 1: ICG members

Working Group 2: GNSS Applications and Space Weather Effects on GNSS

Working Group 3: Regional Reference Frames/Systems

Working Group 4: GNSS Education Curriculum and ICG Information Centres

(Conference Room M0E19)	(Conference Room M7)	(Conference Room M0E05)	(Conference Room M0E07)
<i>Chairperson: Mr. Kenneth Hodgkins, Co-chair of the Action Team on GNSS, United States of America</i>	<i>Co-chair: Mr. Renato FILJAR, Croatia Co-chair: Ms. Rasheedat ABDULRAHIM, Nigeria</i>	<i>Co-chair: Mr. Ivo MILEV, Germany Co-chair: Mr. Janis ZVIRGZDS, Latvia</i>	<i>Co-chair: Mr. Alexandru BADEA, Romania Co-chair: Mr. Vasilie CHIRIAC, Moldova</i>

16:00 *Coffee Break*

16:30 Discussion Session 3 (Working Groups sessions in parallel): Proposals/Recommendations

- *Drafting of discussion sessions reports*

Working Group 1: ICG members	Working Group 2: GNSS Applications and Space Weather Effects on GNSS	Working Group 3: Regional Reference Frames/Systems	Working Group 4: GNSS Education Curriculum and ICG Information Centres
(Conference Room M0E19)	(Conference Room M7)	(Conference Room M0E05)	(Conference Room M0E07)
<i>Chairperson: Mr. Kenneth Hodgkins, Co-chair of the Action Team on GNSS, United States of America</i>	<i>Co-chair: Mr. Renato FILJAR, Croatia Co-chair: Ms. Rasheedat ABDULRAHIM, Nigeria</i>	<i>Co-chair: Mr. Ivo MILEV, Germany Co-chair: Mr. Janis ZVIRGZDS, Latvia</i>	<i>Co-chair: Mr. Alexandru BADEA, Romania Co-chair: Mr. Vasilie CHIRIAC, Moldova</i>

18:00 *Adjourn*

- 09:30** **Discussion Session 4: Round table to finalize the recommendations/observations/proposals** (*All working groups come together to finalize the recommendations*)
- Co-chairs: Ms. Sharafat Gadimova and Mr. Hans Haubold, United Nations Office for Outer Space Affairs*
- Summary report of discussion sessions: presentation of proposals and recommendations consolidated at the discussion sessions
- 11:00** *Coffee Break*
- 11:30** **Discussion Session 4: Round table to finalize the recommendations/observations/proposals (continues)**
- 13:30** **Concluding Remarks**
- *Ms. Sharafat Gadimova and Mr. Hans Haubold, United Nations Office for Outer Space Affairs*
- 14:00** *Adjourn*