

**United Nations / Austria / European Space Agency  
Symposium on**

**Space Applications for Sustainable Development to Support  
The Plan of Implementation of  
The World Summit on Sustainable Development**

**SPACE TOOLS AND SOLUTIONS FOR MONITORING THE  
ATMOSPHERE AND LAND COVER**

**9-12 September 2008**

**Austrian Academy of Sciences, Institute for Space Research  
Schmiedlstraße 6, Graz, Austria**

Hosted by the Austrian Federal Ministry for European and International Affairs,  
Federal Ministry for Transport, Innovation and Technology,  
State of Styria and City of Graz  
And co-sponsored by the European Space Agency

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Afternoon

<b>14:00</b>	<b><u>Objectives of the 2008 Symposium and Review of the 2007 Symposium</u></b> <i>Chairperson: Sevda Ibrahimova (Ms.), Azerbaijan</i> <i>Rapporteur: Md. Atiar Rahman, Bangladesh</i>	
14:05	Objectives and Organization of the Symposium	<i>Mazlan Othman (Ms.), United Nations Office for Outer Space Affairs</i> <i>Levent Canturk, United Nations Office for Outer Space Affairs</i>
14:30	2007 UN Graz Symposium: Review	<i>Sundar Christopher, University of Alabama in Huntsville, United States</i>
<b>15:00</b>	<b><u>Global and Regional Initiatives</u></b> <i>Chairperson: Larysa Areshkina (Ms.), Belarus</i> <i>Rapporteur: Andrea Ferraz Young (Ms.), Brazil</i>	
15:05	Contribution of Global Monitoring of Environment and Security (GMES) for monitoring Land Cover and atmosphere	<i>Josiane Masson (Ms.), GMES Bureau</i>
15:30	PROMOTE Project	<i>Eleni Paliouras (Ms.)</i> <i>German Aerospace Center (DLR)</i> <i>German Remote Sensing Data Center (DFD)</i> <i>Climate and Atmospheric Products (KA)</i>
16:00	<i>Coffee/Tea Break</i>	
16:30	Presentations by participants	
	Present Status of NEPAL on Space Tools for Sustainable Development	<i>Rajendra Kumar Manandhar, Ministry of Environment, Science &amp; Technology, Nepal</i>
	Integration of Remotely Sensed Data Into a Geographical Information System of Soil Resources	<i>Diana Hanganu (Ms.), National Research and Development Institute for Soil Science, Agrochemistry and Environmental Protection (ICPA-Bucuresti)</i>
	Satellite Applications in Aerosol and Glacier Monitoring in Pakistan	<i>Badar Ghauri, Pakistan Space and Upper Atmosphere Research Commission (SUPARCO)</i>
	Monitoring Land Cover Changes in the Arab Region Using High Temporal Resolution NDVI Time Series Images	<i>Ghaleb Faour, National Council for Scientific Research of Lebanon</i>
	Measuring Impacts of Urban Growth on Urban Travel and Implications for Air Quality: Canadian Case	<i>Ying Zhang (Ms.), Canada Centre for Remote Sensing</i>

Concept of Space System For Global Radio Occultation Monitoring of Lower Atmosphere and Ionosphere Based On Super-Small Satellites With GLONASS/GPS Navigationa Signal Receivers

*Valery Vishnyakov, Russian Institute of Space Device Engineering (FUSUE "RISDE")*

Proposal for the Establishment of a Centre of Data Excellence

*Mumba Dauti Kampengele, National Institute for Scientific and Industrial Research, Zambia*

*18:00 Transfer*

*19:30 Reception by the Governor of the State of Styria*

*Weißer Saal*

## Wednesday, 10 September 2008

### Morning

#### **09:00 Overview of Earth Observations, Satellite Applications, and Atmospheric Monitoring**

*Chairperson: Rosario Alfaro(Ms.), Costa Rica*

*Rapporteur: Pier Carlo Sandei, UNEP*

- 09:05 Climate Change Monitoring From Space *Hartmut Grassl,  
Max-Planck-Institute for Meteorology, Hamburg,  
Germany*
- 09:30 Earth Observations for Air Quality and Land Applications *Amy Huff (Ms.), Battelle Memorial Institute,  
United States*
- Overview of Earth Observations: Principles of Satellite Remote Sensing and Applications to Particulate Matter Air Quality *Sundar Christopher, University of Alabama in  
Huntsville, United States*
- 10:20 *Coffee/Tea Break*
- Agriculture, Land and Rural Development**
- 10:40 Experiences of Mapping Land Use/Land Cover and Deriving Trends Over the Vast West African Region *Gray Tappan,  
U.S. Geological Survey-EROS  
(Earth Resources Observation and Science  
Center)*
- Introduction to the Rapid Land Cover Mapper Tool
- 11:00 Presentations by participants
- Monitoring Land Cover in Interests of an Agriculture with Use of the Remote-sensed Data *Larysa Areshkina (Ms.), United Institute of  
Informatics Problems of the National Academy of  
Sciences of Belarus*
- Capacity Building for Sustainable Agriculture Development in Cambodia *Nhean Choch, Ministry of Agriculture, Forestry  
and Fisheries, Cambodia*
- Space Tools and Solutions for Monitoring the Atmosphere and Land Cover for Rural Development Projects: Geo-Spatial Technology Processes and Application Models *Madhava Rao Vasala, National Institute of Rural  
Development (Ministry of Rural Development),  
India*
- Multitemporal Analysis of the Urban Growth of the City of Sapucaí, Paraguay *Silvia Barbara Burgos Sosa (Ms.), Paraguayan  
Institute for Environmental Protection (IPPA)*
- Environmental Risks and Social Dissimilarities: Facing the Challenges of Global Changes in the Baixada Santista Metropolitan Region (Brazil) *Andrea Ferraz Young, Population Studies Centre,  
Brasil*
- 12:00 *Lunch*

Afternoon

**13:30** **Interactions Between Atmosphere and Agriculture, Particularly in Developing Countries**

*Chairperson: Choch Nhean, Cambodia*

*Rapporteur: Ying Zhang (Ms.), Canada*

- 13:35 Mountains as early indicators of Climate Change-  
The role of space technologies on monitoring our  
changing climate *Pier Carlo Sandei, United Nations Environment  
Programme (UNEP)*
- 14:00 Land Cover Contextual Classification Using Space  
Imagery for Wetland and Forest Monitoring *Mykhailo Popov, National Academy of Sciences of  
Ukraine / Scientific Centre for Aerospace  
research of the Earth (CASRE)*
- 14:25 Land Cover/Land Use Change and Vulnerability *Marco Leidel  
Z\_GIS Centre for Geoinformatics,  
Salzburg University, Austria*
- 14:50 *Coffee/Tea Break*
- 15:10 Presentations by participants:
- Spatial Variability of Soil Properties on Kame Field  
of Poznan Lakeland *Hussam H.M. Husein, General Commision for  
Scientific Agricultural Research, Syria*
- Variability of Atmospheric and Land Surface  
Biophysical Parameters Retrieved Using Satellite  
Based Measurements over India *Raghavendra Pratap Singh, Space Applications  
Centre (ISRO) India*
- GIS Technology for Dynamic Monitoring Land  
Cover/Land Use Changes for all of Azerbaijan  
Using High Resolution Space Images *Sevda Ibrahimova (Ms.), National Aerospace  
Agency of Azerbaijan*
- Land Cover and Environmental Hazards; Satellite  
Remote Sensing Approach and Solutions in  
Bangladesh *Atiar Rahman, Bangladesh Space Research and  
Remote Sensing Organization (SPARRSO)*
- Challenges of Obtaining Land Use Data Using  
Conventioanal Methods: Opportunities for Remote  
Sensing *Mphethe Tongwane, Lesotho Meteorological  
Services, Agricultural Meteorology*
- The Utilization of Remote Sensing and GIS  
Technology in Various Applications for Sustainable  
Development in Malaysia *Azman Ahmad, Malaysian Remote Sensing  
Agency  
Ministry of Science, Technology and Innovation  
(MOSTI)*
- 17:00 *Transfer*
- 17:30 *Visit of the Armoury "Landeszeughaus" (15<sup>th</sup> century)*
- 19:00 *Reception by the Mayor of Graz* *City Hall, Old Town Graz*

## Thursday, 11 September 2008

### Morning

#### 09:00 **Space Tools and Solutions for Combating Drought and Desertification**

*Chairperson: Silvia Barbara Burgos Sosa (Ms.), Paraguay*

*Rapporteur: Madhava Rao Vasala, India*

- 09:05 Forest Monitoring *Manuela Hirschmugl (Ms.l, Joanneum Research, Austria)*
- 09:30 Operational Drought Monitoring with METOP-ASCAT and ENVISAT-ASAR *Stefan Hasenauer, Institute of Photogrammetry and Remote Sensing (IPF), Vienna University of Technology (TU Wien)*
- 09:55 Topographic correction of satellite images for improved LULC classification in Mountainous areas *Petra Füreder (Ms.)  
Z\_GIS Centre for Geoinformatics, Salzburg University, Austria*
- 10:20 Satellite Based Data Communication and Dissemination *Otto Koudelka, Joanneum Research, Austria*
- 10:40 *Coffee/Tea Break*
- 11:00 Presentations by participants:
- Spatial Analysis of Forest Regeneration Post Fire in Algeria By Using High Spatial Images Resolution and GIS *Ahmed Zegrar, Centre of Spaces Techniques, Algeria*
- Integrating Remote Sensing Data and Energy Balance Modeling for Detection of Drought and its Publication in the Internet *Adi Witono, Indonesian National Institute of Aeronautic and Space (LAPAN)*
- The Flush Flood Guidance System for Central America: A useful Tool to Improve Flash Flood Warnings and Alerts *Rosario Alfaro, Instituto Meteorologico Nacional of Costa Rica*
- RS/GIS Multi-criteria Zoning of 200,00 ha Land Area for Detailed Feasibility Study, Survey and Design of 5,000 ha for Irrigation Project *Francis Danquah Ohemeng, Irrigation Development Authority (IDA), Ghana*
- 12:00 *Lunch*

*Afternoon*

- 13:30**     **Education, Training and Institutional Capacity Building**  
13:30     Interactive Training on Satellite Tools and Applications (Theme: Air Quality and Land)  
*Trainers: Sundar Christopher, Amy Huff (Ms.)*
- 13:35     Hands-on training session features data access and image analysis techniques and use of relevant resources to convey the benefits and challenges of using space-based tools in assessing land changes and air quality events     *All participants*
- Coffee/Tea Break in between*
- 16:40     Discussion     *All participants*  
Participants discuss the training activities, their approaches, and the benefits and challenges to accessing data and using space-based tools
- 17:30     *Transfer*
- 18:30     *Reception at the Brewery Puntigam*

**Friday, 12 September 2008**

*Morning*

- 9:00**     **Education, Training and Institutional Capacity Building**  
**Follow-Up Activities and Working Group Meetings**  
*Chairperson: Valery Vishnyakov, Russian Federation*  
*Rapporteur: Anusha Rashanthie Warnasooriya (Ms.), Sri Lanka*
- 09:05     United Nations-affiliated Regional Centres for Space Science and Technology Education (Brazil/Mexico, India, Morocco, Nigeria, Education Curricula)     *Levent Canturk, United Nations Office for Outer Space Affairs*
- 09:30     Preparation of Working Group Splinter Meetings     *All participants*
- Working Group 1:  
Training and Capacity Building  
Chairperson: Amy Huff (Ms.)
  - Working Group 2: Availability and Use of Data & Tools for Atmosphere and Land Cover Monitoring  
*Chairperson: Sundar Christopher*
- 10:15     *Coffee/Tea Break*
- 10:35     Working Group Splinter Meetings     *All participants*
- 12:00     *Lunch*

12:00- Informal consultations of the Working Group *Working Group Chairpersons/Rapporteurs and*  
13:30 Chairpersons and Rapporteurs over lunch break to *interested participants*  
finalise the Working Group presentations, including  
Working Group conclusions and recommendations

*Afternoon*

**13:30** **Conclusions and Recommendations of the Symposium**  
*Chairperson: Raghavendra Pratap Singh, India*

13:35 Working Group presentations *Working Group Spokespersons*

Followed by Discussion: *All participants*  
- Approval of Symposium conclusions and  
recommendations  
- Feedback to Symposium organizers

15.20 *Coffee/Tea Break*

**15:20** **Closing Ceremony**  
*Master of Ceremony: Willibald Riedler, Austrian Academy of Sciences*

Distribution of Certificates and Closing Remarks

- *Willibald Riedler, Austrian Academy of Sciences*
- *Levent Canturk, United Nations Office for Outer Space Affairs*

16.30 *Transfer to the Hotel and end of Symposium*