



INFORMATION NOTE

United Nations/Austria Symposium on Data Analysis and Image Processing for Space Applications and Sustainable Development: Space Weather

18 – 21 September 2012, Graz, Austria

1. Introduction

Since the organization of the Third United Nations Conference on the Peaceful Uses of Outer Space (UNISPACE III) in 1999 there has been considerable progress in the operational use of space technology and its applications for sustainable development in general. Space-based assets such as telecommunications, Earth Observation for environmental monitoring and navigation satellites support a wide range of applications and are increasingly integrated into public infrastructures and may contribute to policy- and decision making to improve people's lives. In practice all countries today are users of various space-based solutions.

More and more countries are interested in establishing own basic capacities in space technology development and also in access to- and use of diverse space-based data.

In this context, a **new Graz Symposium series** is proposed starting with 2012. The new series will attempt to address various space-based data analysis and workflows, data availability and data sharing status as well as future opportunities, with a view to facilitate better and easier access to such data and resulting analytical products for general and wide-scale scientific benefit and also in support of decision making processes. Also, as 2012 is the year of the Rio+20 Summit and the initiation of discussions for a post-2015 global development strategy, the Symposium series will look at how various space-based data availability and analysis could support that global development agenda, and how it could help address or monitor the various sustainable development goals and targets set by the United Nations and its Member States in achieving a sustainable development of our Planet.

This year's Symposium, the first of this new series, will be again hosted and co-sponsored by the Government of Austria, the State of Styria and the City of Graz, as well as supported by the European Space Agency (ESA), and held in Graz, Austria from 18 to 21 September 2012.

The focus in 2012 will be on Space Weather data sources, in-situ and space-borne, related networks and potential analysis scenarios including wider access to such data and analysis results. The topic is also timely in light of the predicted maximum solar activity during the 2012-2013 period, and the impact that it could have on the World.

The 2013 and 2014 Symposiums will then also consider Earth Observation and geospatial data use and analysis more in general, with a view to identify means by which various types of space-derived datasets for example could be used in a potentially complementary way for the overall advancement of the global sustainable development agenda, and for improvements in any forecasts of phenomena that could significantly impact the Earth's environment or economies. These two workshops will be organized in the aftermath of the Rio+20 Summit, and with a more clearly outlined

Post-2015 Development Agenda also available, they will be geared towards addressing and supporting specific actions of that agenda.

In that context, OOSA will also collaborate with the Committee on Earth Observation Satellites (CEOS) and the Group on Earth Observations (GEO) on bringing to the Graz symposia agendas topics of relevance such as geospatial- and earth observation data sharing and data democracy, and also a specific review of the UN system's use of space-derived geospatial data as well in partnership with the UN Geographic Information Working Group (UNGIWG).

The Graz symposia will thus give GEO, CEOS and the UNGIWG communities a platform for dialogue with end users and Member States on all aspects of data access and utilization.

2. 2012 Symposium Objectives

For 2012 the focus will be on the Space Weather science and data, following also a earlier successful international initiative on space weather which was designed to build and promote the observation, understanding, and prediction of space weather phenomena and to communicate the results to the public. The International Heliophysical Year (IHY) provided a successful model for the deployment of arrays of small scientific instruments (magnetometers, radio antennas, GPS receivers, all-sky cameras, particle detectors, etc.) in new and scientifically interesting geographic locations to provide global measurements of heliospheric phenomena, and involved more than 70 countries during a two-year period from February 2007 to February 2009. Scientists from many countries now participate in the instrument operation, data collection, analysis, and publication of scientific results, working at the forefront of science research.

Objectives of the 2012 Symposium will be to:

- (a) Review the latest status of deployed space weather instrument arrays, in light of the expansion of initial arrays, their specific data collection workflows, data access and sharing protocols.
- (b) Examine the available data analysis tools and skills as developed or customized by institutions and array operators or users, identify potential gaps and needs
- (c) Promote active cooperation among the various array communities and a cross-cutting exploitation of the collected data, based on expressed needs, leading to the growth of a network of centres of excellence focusing on analysis of space weather data for research and education.
- (d) Expand data analysis efforts for the full set of space weather-related data and other relevant databases, with a view to enable also Space Weather forecasting and to potentially use the analytical results for various decision-making processes
- (e) Discuss the way forward and potential concrete coordinated activities.

Expected outcomes:

- (a) Improved access to and use of specific data towards a better understanding of space weather and of solar-terrestrial interactions
- (b) Identification of joint activities at the international level in leveraging such data

3. 2012 Symposium Programme

The Symposium will consist of a series of invited technical presentations by the World's most renowned experts in the field with sufficient time set aside for discussions and for presentations by participants on their own relevant activities. The following topics will be considered in dedicated sessions:

- **Review of World-Wide Instrument Arrays and other (space-based) data sources**
This session will consider presentations by various array leads, as invited, for providing the audience with an inclusive background on availability of data and collection processes. It will also look at space-based imagery sources (such as the Stereo satellites) and their benefits in analyzing solar activity, for example.
- **Data and Analysis Tools, Availability Issues**
This session will look at the existence of various data processing and analysis tools, any existing gaps, or needs, as well as general availability of the data or analysis results to the larger public, or to the various scientific groups as needed
- **Data Sharing, Access Issues, Common Data and Resulting Analytical Products**
This session will consider ways through which data collected through the various arrays and imaging sensors could be archived and more accessible, in standard ways, enabling better cooperation and data access, data sharing for a more efficient and direct exploitation. It would also consider how analysis results are distributed or made available for general purposes.

The sessions may be supplemented by demonstrations of and training on relevant software tools by various participants and instrument arrays lead scientists or satellite data users, and by practical hands-on exercises identified in collaboration with invited participants. The co-sponsors will also be organizing an attractive programme of social events for all Symposium participants.

The detailed Symposium programme will be made available at the Symposium webpage at <http://www.unoosa.org/oosa/en/SAP/act2012/graz/index.html>.

4. Participants

Applicants must generally have a university degree and well-established professional working experience in a field related to the theme of the Symposium. Applicants should ideally be involved in the planning, implementation or operation of data arrays, in relevant organizations, international or national, research or academic institutions or industry. Applications from qualified female applicants are particularly encouraged. The co-sponsors of the Symposium will jointly select participants on a competitive basis. Successful applicants will be notified beginning from July 2012.

5. Financial Support to Selected Participants

Within the limited financial resources available to the co-sponsors, a number of qualified applicants from developing countries, who have expressed the need for financial support, will be offered financial support to attend the Symposium. This may include the provision of a round-trip air ticket between Graz and the applicant's international airport of departure and daily subsistence allowances to cover board and lodging for the duration of the Symposium. En-route expenses or any changes made to the air ticket must be borne by the participants.

Due to the limited availability of financial resources it is usually not possible to provide assistance to all qualified applicants that express the need for financial support. Applicants and their

nominating organizations are therefore strongly encouraged to find additional sources of sponsorship to allow them to attend the Symposium.

6. Dates and Location

The Symposium will be held from 18th to 21st September 2012 in Graz, Austria, at the Space Research Institute of the Austrian Academy of Sciences. Selected participants will receive information with details on board and lodging and other local arrangements.

7. Language of the Symposium

Applicants must have a working knowledge of English, which will be the only language of the Symposium. Selected participants who receive funding support from the co-sponsors might be required to make a 10 to 20 minutes presentation on their work related to the Symposium theme.

8. Life and Health Insurance

Life and major health insurance is the responsibility of each selected participant or his/her nominating institution or government. The co-sponsors will neither assume any responsibility for life and major health insurance, nor for any other expenses related to medical treatment or accidental events.

9. Deadline for Submission of Applications

The fully completed original of the application form should be mailed directly (or if necessary forwarded through the Resident Representative of the United Nations Development Programme, UNDP) to:

Office for Outer Space Affairs
United Nations Office at Vienna
Vienna International Centre
P.O. BOX 500
1400 Vienna, AUSTRIA
Fax: (+43-1) 26060-5830

The applications must be received **no later than Friday, 29 June 2012**. To accelerate the processing of your application, please e-mail an advance copy of the completed form (.pdf, .doc) to the Office for Outer Space Affairs (unpsa@unoosa.org). Only complete applications, with all the requested information and signatures, will be considered.

10. Points of Contact

For questions related to the application process, please contact **Ms. Ayoni Oyenyin** (ayoni.oyenyin@unoosa.org, Tel: +43-1-26060-4953).

For questions related to the local arrangements in Graz, please contact **Ms. Birgit Kössler** (birgit.koessler@joanneum.at; Tel: +43 316 876 1256; Fax: +43 316 876 1404).

For questions related to the Symposium programme and to co-sponsorship opportunities, please contact **Mr. Lorant Czaran** (lorant.czaran@unoosa.org, Tel: +43-1-26060-4158).

Please frequently check <http://www.unoosa.org/oosa/en/SAP/act2012/graz/index.html> where the latest information about the Symposium will be posted later.