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Hands on Space with SGAC: Enabling Space Development and Education among young people in Developing Countries

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Abstract

This presentation outlines the space development and education of young space professionals and students amongst developing countries, specifically in Latin America, where there's a big lack of such industry, thanks to the efforts of Latin American members of the Space Generation Advisory Council (SGAC) across the region. On the occasion the UN Workshop on the Applications of Global Navigation Satellite Systems 2008, in Medellín, Colombia, the presentation addresses not only the efforts gathered in the region for space development and education, but also how to improve it by means of using GNSS as a tool also for education, outreach and awareness. The presentation have 5 main topics, at the beginning we present a brief introduction of the Space Generation Advisory Council, followed by the creation of the Latin-SG composed mostly of developing countries. We follow explaining our role on education and development by means of delivering space promotion across the region, as well as providing support to organize activities and projects with educational approach and awareness. We also present our visions for the future by increasing participation and involvement within young people and professionals, followed by our recommendations and visions with applications of GNSS. With these recommendations we aim at the fourth recommendation regarding institutional framework addressed to the Office for Outer Space Affairs at the UN International Meeting on the Use and Applications of Global Navigation Satellite Systems 2004: "*Support should be provided for capacity building through GNSS education and training*".

The contribution has been coordinated by the Space Generation Advisory Council (SGAC) in support of the United Nations Programme on Space Applications.

1. The Space Generation Advisory Council

The Space Generation Advisory Council in support of the United Nations Programme on Space Application (SGAC) is a non-governmental organization which aims to represent students and young space professionals to the United Nations, States, and space agencies. SGAC has permanent observer status in the UN Committee on the Peaceful Uses of Outer Space (COPUOS). SGAC has a long history and was conceived at the Third United Nations Conference on the Exploration and Peaceful Uses of Space (UNISPACE-III) in Vienna in 1999, the SGAC Executive Council is made up of representatives from each of the 6 UN regions, and has a larger body of representatives from nation states. Our focus is on pragmatic space policy advice to policy makers based on the interests of students and young professionals, broadly in the age range 18-35, interested in space from around the world.

The policy input of SGAC to date includes regular input to COPUOS, including to the UNISPACE-III Action Teams.

In collaboration with European Space Policy Institute (ESPI), SGAC opened its first office in 2005 in their premises and hired its first intern who started in January 2006.

The Space Generation Advisory Council (SGAC) is also a global Network of Networks which brings together students, young professionals, space organizations and other NGOs to present a unified vision for the future exploration of space to the United Nations and other bodies.

In addition to our work in Space Policy and Space Education and Outreach, the Space Generation also organizes the annual Explorer's Wanted! Space Generation Congress which is held in conjunction with the International Astronautical Congress. SGAC is organized by a group of volunteers from around the world.

2. The Latin – SG

In a region where space development and education is poor, there was a necessity of building up a regional-focused group where members will gather efforts into bringing the region more involved with space. This marked the creation of the Latin – SG community, where Latin American members of the SGAC participate and communicate aiming to provide a framework of development under the context of education. The group was created within the SGAC during UNISPACE III, in Vienna, 1999. Years passed and the region got involved within several projects including the creation of ALE (Asociacion Latino-Americana del Espacio). More over, in the past 2 years the region have got more involved in the subject of bringing space to schools and aiming to create awareness in the region, we know that due to the lack of space industry in the region (for exception of countries like Brazil, Argentina), we must provide an educational framework to consolidate a long-term space development within developing countries across Latin America.

2.1 Latin – SG activities

The regional group of the SGAC comprises several activities, developed within very few years, to increase participation and awareness across the region, these are:

- Latin American Space Virtual Meetings:
This is a trimestrial-based meeting with NPoC's (National Point of Contacts) and active members where we discuss our path for space education and development and foster participation, involvement and commitment within members.
- Online Blog [real-spatium.blogspot.com]
This was created as a tool to provide communication across the region; here we post about activities and projects all around Latin America. We also aim to promote space education and development by networking and sharing ideas.
- Space Activities for Kids across the region
 - Water rocket competitions
 - Mini conferences and seminars for kids in schools
 - Space Promotion
- World Space Week & Yuri's Night
- Promote space activities amongst the youth

2.2 Latin – SG projects

We also aim at space development, where small projects come into place in the near future, aiming at consolidation of a strong basis to create more ambitious projects in the future. Among our current projects, we have:

- Small rockets and sounding rocket development
- Congress and Talks
- Education
 - Water rocket competitions for kids.
 - Mini conferences and seminars for kids in schools.
 - Space Promotion and awareness.

- COPUOS Input
 - Inform delegates from LA about our activities.

3. Our role on education

We, as a regional group, must focus on bringing space education to young people in order to create a strong basis which will lead the future space development in the future. This is why our main role is to provide solutions focused in educational aspects, this is achieved with these facts:

- Deliver Space Promotion across the Region
 - By participation and promotion of space activities.
- Provide support to organize activities
 - By reaching many students and young professionals.
- Outreach - Spread the voice and be heard
 - By increasing motivation and participation.
- Create a roadmap of the future
 - And give opportunities for the future talents.
- Promote space activities amongst the youth

4. Our visions for the future

During our SGAC '50 years visions' project – a highlight of 2007, young people around the world generated 'visions' that laid recommendations for the next 5 to 50 years and called upon "Improvement of rapid response on disasters: Earth based/space based, especially for 'developing countries' which do not have **indigenous** tools". Space Technology such as GNSS can play a significant role in observing, understanding and monitoring these threats. Satellites are able to cover vast natural sites that often span national boundaries and remain difficult to survey on the ground. GNSS could also provide enormous benefits in areas such as:

- Remote Sensing
 - Demonstrate applications and uses.
- Education for Sustainable Development
 - Create awareness and commitment.
- Conservation of Natural and Cultural Heritage.
 - Building Capacity to Improve Conservation. Developing countries frequently lack accurate cartography for their heritage sites this translates in difficulties to undertake a proper on-going monitoring. Satellite imagery can bridge this enormous gap.
- Prevention and Mitigation of Natural Disasters
 - Incrementing consciousness about these problems.
- Promote space activities amongst the youth
 - By showing its benefits and applications.
- **GNSS is also a tool for outreach and awareness**
 - By demonstrating to kids and young people how GNSS could change and improve their lives.

Today, natural and cultural sites face a variety of potential threats. These include uncontrolled agricultural and urban development, regional conflicts, natural catastrophes, climate change, excess of tourism, and so on.

5. Recommendations

- Promote Education
 - Not only about space, but in applied sciences.
- Provide support and resources
 - From universities, agencies, industry...
- Build capacities and reinforce development
 - By the creation of space clubs, organizations and agencies.

6. Acknowledgments

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