

ANNUAL REPORT EXECUTIVE SUMMARY



SPACE GENERATION
ADVISORY COUNCIL

IN SUPPORT OF THE UNITED NATIONS
PROGRAMME ON SPACE APPLICATIONS

SGAC 2013





SPACE GENERATION ADVISORY COUNCIL

In Support of the United Nations Programme on Space Applications

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Sponsors and Partners

The Space Generation Advisory Council (SGAC) is very grateful for the continued generous support of our sponsors and partners. This year our sponsors and partners expanded both their financial and intellectual contributions. This has played an important role in the improved quantity and quality of SGAC's output in 2013.

SGAC would like to thank all sponsors and partners once again for their contribution to one of the most successful years in SGAC history.

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Institute of Air and Space Law



International Space University



QB50 Project – Von Karman Institute



ÖWF (Austrian Space Forum)



Space News



SpaceRef



Women in Aerospace – Europe

Partners



World Space Week Association



Young ESA



The Council of Young Ukrainian
Space Industry Workers



Yuri's Night

Executive Council Members

Chairpersons

Chijioke Cj Nwosa (Nigeria)	Chair
Christopher Vasko (Austria/Hungary)	Co-Chair

Executive Office

Andrea Jaime (Spain)	Executive Director
Jacob Hacker (Australia)	Treasurer
Aafaque R. Khan (India)	Executive Co-Secretary
Ali Nasser (Iran)	Executive Co-Secretary
Cynthia Chen (Australia)	Communications and Public Relations Co-Lead
Michael Kretzenbacher (Australia)	Communications and Public Relations Co-Lead
Claudia Raposo Correia (Portugal)	Membership Manager
Emmanuelle David (France)	Project Co-Coordinator
Alanna Krolkowski (Canada)	Project Co-Coordinator
Stephen Ringler (USA)	Fusion Forum Manager

Regional Coordinators

James Chibueze (Zambia)	Africa
Minoo Rahnasabapathy (South Africa)	Africa
Suresh Battharai (Nepal)	Asia Pacific
Yusuke Muraki (Japan)	Asia Pacific
Guzel Kamaletdinova (Russia)	Europe
Damian Maria Bielicki (Poland)	Europe
Behnoosh Meskoob (Iran)	Middle East
Hasan Aziz Kayihan (Turkey)	Middle East
Ashley Chandler (USA)	North, Central America and the Caribbean
Alan Steinberg (USA)	North, Central America and the Caribbean
Nicole Jordan (Colombia)	South America
Victoria Alonsoperez (Uruguay)	South America

*Note: Members as of December 2013. Note that some members ended their terms during the year, and they may not be named here.

Letter from the Co-Chairs

Dear supporters and colleagues,

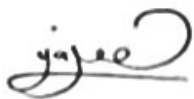
The Space Generation Advisory Council has completed another year and is proud of the achievements of the organisation and its members. The groundwork laid in previous years has opened up new opportunities to fulfil our goal of improving the youth voice in the international space industry. Despite the ever growing and changing leadership of our organisation, we are proud of the cohesion, spirit and dedication of our members that led to a remarkably successful 2013.

This year saw the second edition of the Space Generation Fusion Forum, which was again a great success, not only thanks to our generous financial supporters, but also thanks to our team of volunteers and the excellent advice and support of our partners. The event gave 47 delegates the chance to engage in the hottest space topics, to discuss with their peers and to be guided by key players of the sector. The annual Space Generation Congress – now in its 12th year – put our organisational team to the test. We faced a large cultural gap and substantial challenges in almost all areas of the organising effort but SGAC nevertheless hosted a fantastic Congress for 117 delegates from 38 countries in Beijing, China. The conference was supported by a line-up of top-level speakers and a keynote speech from NASA Administrator Charles Bolden. The quality of the Congress would not have been possible without a strong SGAC team and our supporters.

We are grateful to all those who trust in and contribute to SGAC. We would like to extend our gratitude to our supporters and partners, who provided not only the financial support that make our activities possible, but whose advice, dedication and trust are also key to our success. We would also like to offer our warmest thanks to our Executive office team, and in particular to Andrea Jaime, for running our Vienna office and our daily operations. Finally, we greatly appreciate the guidance, continued support and time invested by our Advisory Board. We are very grateful for your cooperation and look forward to strengthening our relations in the future.

SGAC is growing, our network is strong and, looking forward to 2014, we feel the organisation is ready to meet future opportunities. We are proud that SGAC has further matured this year and we are dedicated to ensuring our organisation remains professional, united and focused on representing the voice of the next generation.

So, let us keep up the good work, and stay tuned. 2014 will be a great year! Let's face it together.



Chijioke(CJ) Nwosa
SGAC Chair



Chris Vasko
SGAC Co-Chair

SGAC Output at a Glance

SCHOLARSHIPS AND AWARDS (42)

- AYAA Australian Futures Award (6)
- DLR Standout Student Scholarship (3)
- EIAST Scholarship (2)
- FFG/Bvmit Austria Space Applications Scholarship
- GNSS and EO for Disaster Management Workshop Scholarship
- Japanese-SGC Scholarship (2)
- OHB - Move an Asteroid Technical Paper Competition
- SGAC-IAASS Space Safety Paper Competition (3)
- \$pace is Business Paper Competition
- Space Generation Advisory Council Global Grants Programme (8)
- Space Generation Advisory Council (SGAC) Young Leader Awards (4)
- Space Solar Power Design Competition (2)
- SSPI Satellite Futures Scholarship (3)
- United Nations / International Astronautical Federation (UN/IAF) Workshop Scholarship
- Washington Space Business Roundtable Scholarship (2)
- MVP AIAA Award
- NASA SCaN Scholarship

CONFERENCES AND WORKSHOPS SUPPORTED (4)

- Space Generation Fusion Forum (SGFF), USA
- Space Generation Congress (SGC), China
- Global Navigation Satellite Systems and Earth Observation for Disaster Management Workshop, (SGAC STDM and YGNSS Project Groups), China
- Space Generation Mexico, Mexico

PAPERS AND PUBLICATIONS (20+)

PROJECT GROUPS

- Space Safety and Sustainability Project Group:
 - *Conceptualising an Economically, Legally, and Politically Viable Active Debris Removal Option* by Giulia Federico (Italy), Matteo Emanuelli (Italy), Joshua Loughman (USA), Deva Prasad (India)
 - *Design of an Active Space Debris Removal Mission Using Modified Launch Vehicle Upper Stages* by Seyed Ali Nasserli (Iran), Matteo Emanuelli (Italy), Siddharth Raval (India), Philipp Maier (Germany), Emmanuelle David (France), Vitali Braun (Germany), Christoph Becker (The Netherlands), Scott Fisher (Australia), Leila Ghasemzadeh, (Iran), Ali Alizadeh (Iran), and Andrea Turconi (UK)
 - *Targets for an Autonomous Debris Removal Mission* by Matteo Emanuelli (Italy)
- Youth for GNSS Project Group:
 - *GNSS for Disaster Management - Technical and Policy oriented recommendations* by Tejal Thakore, (UK), Stephanie Wan (USA), Katarzyna Urbanska (France), Juan Duran (France), Peetak Mitra (India), and Tale Sundlisæter (Norway)

- *Youth for GNSS Educational Flyer* – Translated and published in English, Arabic and Chinese
- Space Law Project Group:
 - *The Conception and Treatment of International Governmental Organisations in the Preparatory Works of the Outer Space Treaty* by Christopher Johnson (USA and UK), Joyeeta Chatterjee (India), Sarah Moens (Belgium), Aleksandra Puscinska (Poland and UK), Ademir Vrolijk (Canada), and Karina Wardak (Germany)
- Commercial Space Project Group:
 - *Identification and Analysis of National and Regional Industry Clusters of the European Space Industry*, by Zhuoyan Lu (China), Jie Hou (China) and Vikram Udyawer (Australia)
 - *Entrepreneurship and Innovation in the European Space Sector: Overview and Impacts Of European Space Agency and European Union's Initiatives*, by Noemie Bernede (France)
 - *A Historical Overview of Chinese Entrepreneurship and Its Cultural Impact on Space Industry Policy and Decision-Making Procedures*, by Zhuoyan Lu (China)
 - *Historical and Culture Assessment of Entrepreneurship and Investment in Germany*, by Philipp Maier (Germany)
- Space Technologies for Disaster Management Project Group:
 - *Building up national space capabilities for disaster management: analysis of a trend in emerging space nations and developing countries* by Noemie Bernede (France)
 - *Social media & space technologies in the disaster cycle - help or hindrance?* by Natassa Antonio (Greece) and Mario Ciaramicoli (Italy)
- Small Satellite Project Group:
 - *Why and How Small Satellites can be Relevant Tools for Scientific Research*, by Shanti Swaroop Kandala (India), Sonam Gupta, Lucas Salvador, Ankita Upmanya (India), and Aafaque Khan (India)
- *From the Periphery to the Center – a Young Professional Perspective on Youth Unemployment in Europe* Presentation by Luís Ferreira (Portugal)
- SGAC Annual Report 2013
- SGAC Executive Summary of the Annual Report 2013
- SGAC Monthly Newsletters (12)
- Space Generation Fusion Forum 2013 Final Report
- Space Generation Congress 2013 - Executive Summary
- Space Generation Congress 2013 Final Report
 - Including five Working Group individual reports and the “GNSS and EO for Disaster Management Workshop” report
- In addition, more than 30 presentations including posters, papers and panels, were given by SGAC members at this year’s IAC
- Space Solar Power Video Release by SSP Competition Winners
- Space Generation Video Release by Artiom Anisimov (Russia)
- Space Generation Fusion Forum 2013 Summary Video Release by Thu Throng Vu (Vietnam)
- Space Generation Congress 2013 promotional Video Release by Reinhard Tlustos (Austria)
- Space Generation Congress 2013 Summary Video Release by Edu F. Aymerich (Spain)

CONFERENCES and EVENTS WITH OFFICIAL SGAC REPRESENTATION (29)

- 6th IAASS Conference: Safety is not an Option, Montreal, Canada
- 8th Meeting of the International Committee on Global Navigation Satellite Systems (ICG), organised by the EIAST, Dubai, UAE
- 23rd United Nations/International Astronautical Federation Workshop on "Space Technology for Economic Development", Beijing, China
- 29th Annual National Space Symposium in Colorado Springs, Colorado, USA
- 29th International Symposium on Space Technology and Science, Nagoya, Japan
- 50th Session of the Scientific and Technical Subcommittee of UN COPUOS, Vienna, Austria
- 52nd Session of the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space (UNCOPUOS), Vienna, Austria
- 56th Annual Meeting of the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS), Vienna, Austria
- 64th International Astronautical Congress (IAC), Beijing, China
- Aerospace Futures 2013 - Australian Youth Aerospace Association (AYAA), Sydney, Australia
- AIAA SPACE 2013 Conference & Exposition, San Diego, California, USA
- Annual ESPI Autumn Conference; Vienna, Austria
- European Interparliamentary Space Conference Plenary, Brussels, Belgium
- European Interparliamentary Space Conference Workshop, Brussels, Belgium
- European Space Policy Institute Event - *Space Against Youth Unemployment*, Vienna, Austria
- Global Exploration Roadmap Meeting, Royal Astronomical Society, London, UK
- IAF Spring Meetings, Paris, France
- IAU's 35th International School for Young Astronomers 2013, Bandung, Indonesia
- ISU Space Studies Programme, Strasbourg, France
- ISU Southern Hemisphere Summer Space Programme, Australia
- SpaceUp Paris, France
- Space Exploration, Secure World Foundation and Women in Aerospace Europe, Brussels, Belgium
- Space Studies Programme 2013, International Space University, Strasbourg, France
- Tsinghua University IAF-SUAC International Student Workshop, Beijing, China
- Toronto Students for the Advancement of Aerospace The Do-It-Yourself Innovator Conference: The Impact of Self-Innovation on the Aerospace Industry, Toronto, Ontario, Canada
- The 20th Session of the Asia-Pacific Regional Space Agency Forum (APRSAF-20), Hanoi, Vietnam
- United Nations Economic and Social Council (UN ECOSOC), New York, USA
- UNSPIDER-TAM mission, Accra, Ghana
- World Space Week India Event, Bisti, India

Although they are not all listed here, SGAC members have also attended and helped to organise numerous events in their home countries.

FORMALISED PARTNERSHIPS (9)

- Beihang University
- Future Space Leaders Foundation
- QB50 Project, Von Karman Institute
- Satellite2014
- Space Foundation
- SpaceTec
- World Space Week Association
- Young ESA
- Young Ukrainian Space Industry Workers

SGAC Activity Highlights

GENERAL HIGHLIGHTS

- Chijioke CJ Nwosa (Nigeria) succeeded Catherine Doldirina (Georgia) as the new Chair of SGAC.
- SGAC welcomed a new Co-Chair, Chris Vasko (Austria/Hungary).
- SGAC welcomed two interns, Ryan Laird (UK) and Felipe Arevalo (Colombia).
- SGAC included new members to its Advisory Board, comprised of influential members of the international space community, to provide strategic guidance.

New members include:

- Catherine Doldirina, Outgoing Chair 2013
- Steve Eisenhart, Senior Vice President, Strategic and International Affairs at the Space Foundation
- Clayton Mowry, President of Arianespace, Inc.
- Enrique Pacheco-Cabrera, Deputy Director for Space Science and Technology Affairs, Mexican Space Agency
- Chris Welch, Director MSc Programmes, International Space University.
- SGAC launched its new website with more updated content and easier navigation.
- 47 delegates from 15 countries attended the 2nd Space Generation Fusion Forum (SGFF).
- SGAC supported 8 scholarships to delegates from 5 countries to attend SGFF 2013 in Colorado, USA.
- SGAC attracted more than 250 applicants from 58 different countries for the Space Generation Congress (SGC) 2013. The SGC 2013 involved 116 delegates travelling from 38 different countries around the globe.
- SGAC supported 25 full scholarships to delegates from 13 countries to attend SGC 2013 in Beijing.
- SGAC continued to record and publish presentations conducted during SGC. This offers members who were unable to attend the Congress the opportunity to review and recognise the ideas discussed during the event.
- Space News, in partnership with SGAC, started a special deal for SGAC members.
- The Project Group on Commercial Space was created and launched to explore the commercial space arena.
- The International Academy of Astronautics (IAA) selected nine SGAC members to participate in their Study Groups.
- The SGC 2013 Gala Dinner was the largest ever organised.
- SGAC achieved remarkable participation at the IAC 2013 (Beijing, China). SGAC members presented more than 40 technical papers covering vast and varying areas of interest, participated in panel discussions and organised incredibly successful outreach events, such as the NEO and Planetary Defense Event, SGAC Next Gen Reception (together with the Space Foundation), and participated in events such as Heads of Industry and Young Professionals Plenary, Space Outreach Panel, Space Debris Panel and several IAF Committees.
- SGAC expanded its social media activities with new and more active Twitter, Facebook and Flickr accounts.
- SGAC started to update its network and database of members, having so far an active membership of 5000 people from around the world.

EXECUTIVE OFFICE HIGHLIGHTS

- SGAC Executive Director Andrea Jaime (Spain) presented SGAC's general statement, covering SGAC's developments at the UN COPUOS S&T Subcommittee in February 2013.
- SGAC Co-Chair Chris Vasko (Austria/Hungary), presented SGAC's general statement at the 56th Session of the UN COPUOS in Vienna, in June, which explained the activities that SGAC has been engaged in during the past year.
- SGAC delivered two technical presentations at the UN COPUOS.
- SGAC Executive Director, Andrea Jaime (Spain) was on a panel on space outreach organised by the Space Societies IAC Committee at the Global Networking Forum of the IAF.
- SGAC Executive Director Andrea Jaime (Spain) was the moderator, together with Stephen Ringler (USA) of the Space Generation Fusion Forum Panel at the 29th National Space Symposium.
- SGAC Executive Director, Andrea Jaime (Spain), participated in a panel for Young Professionals at the European Interparliamentary Space Conference in Brussels, Belgium, where co-Chair, Chris Vasko (Austria/Hungary) also attended.
- SGAC Executive Director, Andrea Jaime (Spain), attended the 8th meeting of the International Committee of GNSS in Dubai, UAE.
- SGAC Executive Director, Andrea Jaime (Spain), contributed as author to the ESPI Policy Year Book, preparing, coordinating and analysing a survey among young professionals in the space sector to evaluate their professional situation.
- Ali Nasser (Iran) was appointed as the new Executive Secretary.
- Jacob Hacker (Australia) was appointed as the new Treasurer.
- SGAC Executive Director, Andrea Jaime (Spain) was invited, together with Luca Nardecchia (Italy) to the MAVEN Launch, in the USA, including some featured interviews and panel.

AFRICA REGION HIGHLIGHTS

- The Africa working group was established, which is designed to stimulate discussions among the National Points of Contact (NPoCs) and other members in the African region, thus setting up a platform to allow the opinions of students and young professionals from the African continent to be heard on matters relating to Africa and space activities. An "African Space Agency" is one topic of considerable interest.
- CJ Nwosa (Nigeria) became the Chair of SGAC.
- NPoCs to join the region in 2013 are Ifriky Tadadjeu Sokeng (Cameroon), Suki Dauda Sule (Nigeria), Funmi Erinfoami (Nigeria), Lumka Msibi (South Africa), Conrade Muyambo (Zimbabwe) and Constant Chuma (Zimbabwe).
- There was a significant increase in the outreach activities in different countries of the region such as educational and outreach workshops (Zambia, Nigeria) and linking SGAC with the Kenyatta Astronomical Society (Kenya).
- Beza Tesfaye (Ethiopia) was the winner of one of the SGAC Young Leadership Awards.
- Monthly organisational meetings with all NPoCs were established to coordinate activities.
- Africa was very active on the organisation of World Space Week and Yuri's Night events.



ASIA PACIFIC REGION HIGHLIGHTS

- Ten National Points of Contacts were welcomed in the region: Zihua Zhu (China), Aafaque Khan and Muhammad Khan (India), Andrew Lee Chee Hau (Malaysia), Kishor Acharya and Ishan Basyal (Nepal), Jack Yeh (New Zealand), Waqas Kazi (Pakistan), Rogel Sese (Philippines), and Ili Jang (South Korea).



- Aafaque Khan (India) and Suresh Bhattarai (Nepal) resigned from their posts as co-executive secretary at the SGAC Executive Office. Ali Nasser (Iran) took the position as the new secretary.
- Joyeeta Chatterjee (India) and Yohan Ferreira (India), outgoing regional coordinators were thanked for their great effort to lead SGAC in Asia Pacific. Suresh Bhattarai (Nepal) and Yusuke Muraki (Japan) were elected as new Regional Coordinators for the Asia Pacific Region.
- Joyeeta Chatterjee (India), former Regional Coordinator of Asia Pacific and Co-Lead of SGAC Space Law Working Group, Yusuke Muraki (Japan), Regional Coordinator Asia Pacific, and Thu Throng Vu (Vietnam), NPoC Vietnam, were the winners of SGFF Global Grants Programme 2013.
- The SGC Japanese Scholarship Programme, a unique programme created by SGAC alumni and members in Japan, was successfully introduced. It supported two Japanese Participants to SGC 2013 with full financial support. In total, SGAC Asia Pacific was awarded 9 scholarships out of 25 scholarships for SGC 2013.
- A total of 38 participants from Australia, China, Hong Kong, India, Japan, Korea, Nepal, Pakistan and Sri Lanka participated in the SGC 2013. This constituted 33% of the total number of participants and 24% of the total countries represented.
- The first SGAC workshop on "The Role of GNSS and Earth Observation in Disaster Management" provided a great opportunity for 25 students and young professionals to meet and exchange views with leaders of the space sector.
- Mr. Kishor Acharya (Nepal), NPoC to Nepal, was the winner of the Emerging Space Leader Award in the student category.
- Yusuke Muraki (Japan), Regional Coordinator of Asia Pacific, presented a proposal during the 20th Asia Pacific Regional Space Agency Forum (APRSAF-20), in Hanoi, Vietnam to host the Asia Pacific Space Generation Congress (AP-SGC) 2014 in conjunction with APRSAF-21 in Japan.
- Yusuke Muraki (Japan), Regional Coordinator, Prasanna Deshapriya (Sri Lanka), NPoC for Sri Lanka, Thu Throng Vu (Vietnam), NPoC for Vietnam and Regel Mari Sese (Philippines), NPoC for Philippines, were active participants in the 20th Asia Pacific regional Space Agency Forum (APRSAF-20) in Hanoi, Vietnam.
- The largest SpaceUp Event in Asia, SpaceUp India 2013, was successfully concluded with the participation of Aafaque Khan (India), NPoC of India, and other SGAC members.
- Pirada Techavijit (Thailand), was a winner of the Axe Apollo Space Academy Competition 2013, enabling her dream to become the first astronaut from Thailand.

➤ EUROPEAN REGION HIGHLIGHTS



- SGAC members in Europe participated in Yuri's Night and World Space Week celebrations.
- New NPoCs were appointed in Austria, Finland, France, Italy, Montenegro, The Netherlands, Norway, Poland, Romania, Russia and Sweden.
- European organisational teleconferences were held quarterly.
- The European Facebook page showed a large degree of activity.
- Space Day was held for the very first time in Montenegro in September 2013.
- SGAC was represented during the UN COPUOS sessions in Vienna, Austria.
- Memoranda of Understanding were signed with three European organisations: Council of Young Ukrainian Space Industry Workers, Young ESA, and the QB50 Project from the von Karman Institute.

- Leadership presentations were given at the International Space University Summer Programme.
- Seven Europeans were winners of scholarships or competitions to attend the SGC and the IAC in Beijing, China. This included Lisa Kuepers (Germany), Daniel Prokein (Germany), Benjamin Kraetzig (Germany), Massimo Vetrissano (Italy), Aidan Cowley (Ireland), Lluç Palerm (Spain) and Sandra Gonzalez (Spain).

➤ MIDDLE EAST REGIONAL HIGHLIGHTS



- Mahsa Taheran (Iran) ended her four-year term as Regional Coordinator for the Middle East. Behnoosh Meskoob (Iran) was elected as the new RC for this region.
- Ayman Mahmoud and Ashraf Nabil (Egypt), Mohammadreza Rezaei (Iran), Hisham Deek (Lebanon) and Aisha Saleous (Palestine) were appointed as NPoCs.
- S. Ali Nasseri (Iran) received an IAF-ESL grant to participate in SGC, UN/IAF and the IAC.
- First scholarship targeted exclusively for the Middle East was given by EIAST (Emirates Institution for Advanced Science and Technology) to Nouf Al-Jaloud (Saudi Arabia) to attend the 8th ICG (International Committee on GNSS) in Dubai.
- Behnoosh Meskoob (Iran) received the SGAC 2013 Young Leadership Award to participate in SGC 2013.
- Middle Eastern countries actively participated and held programmes on International Astronomy day, Yuri's night and World Space Week.
- Hisham Deek (Npoc for Lebanon) and a team from Lebanon successfully observed comet ISON.
- The 3rd Iran Cansat Competition was held successfully in October 2013 in Tehran, Iran, with the participation of 28 universities from Iran and two teams from Cairo University, Egypt.
- The "Eyes of 51 Degrees" team from Iran discovered an asteroid (provisional level) in SGAC's Find an Asteroid Search Campaign.
- SGAC members from Cairo University of Egypt participated in the 5th Nano-Satellite symposium. Ashraf Nabil (Npoc for Egypt) won the 3rd prize in one of the symposium contests.
- The Jam-e-Jam newspaper of Iran interviewed Behnoosh Meskoob (RC for Middle East) about SGAC activities in Iran.

➤ NORTH, CENTRAL AMERICA AND THE CARIBBEAN REGIONAL HIGHLIGHTS



- SGAC and the Space Foundation hosted the 2nd Space Generation Fusion Forum (SGFF) at the 29th National Space Symposium (NSS) in Colorado Springs, CO (USA) on April 7-8, 2013.
- The region was proud to host over 130 Yuri's Night events across four countries.
- Regional Coordinators Alan Steinberg (USA) and Ashley Chandler (USA) continued work on a collaboration with the peer reviewed academic journal *New Space* to increase opportunities for SGAC research to reach a wider audience.
- Magaly Sandoval (Costa Rica) and the Costa Rica Institute of Technology's space observation group AstroTEC put on outreach activities for both kindergarteners and the general public in conjunction with World Space Week.
- Magaly Sandoval (Costa Rica) was one of the winners of the SSPI Scholarship to attend the SGC 2013.
- Martin Leitgab (USA) won the Space Solar Power Competition this year.
- NASA SCA^N for the second consecutive year gave a scholarship to a student to participate at the SGC. It was awarded to Nicole Tchorowski (USA).

- Carmen Felix (Mexico) collaborated with the Mexican Space Agency's digital magazine, publishing articles about personal experiences in the space sector and dedicating the December article to introducing SGAC.
- Carmen Felix (Mexico) organised an SGAC Event at the Universidad Nacional Autónoma de Mexico.
- The SGAC partnered with the Future Space Leaders Foundation to allow USA professionals and students to attend SGAC events.

➤ SOUTH AMERICAN REGION HIGHLIGHTS

- Bolivian NPoC and members participated in the NASA Space App challenge, and won second place. Their focus was on camera applications for use in nanosatellites built with low cost in mind.
- Brazil launched the fourth remote sensing satellite of the CBERS series, developed in partnership between Brazil and China mid-December 2013.
- Alejandro Lopez (NPoC for Chile) participated in the hosting of the Google Lunar X PRIZE summit. It was the first time that the summit was held in South America.
- SGAC members participated with other Peruvian students in an analogue mission in the Utah desert at Mars Desert Research Station (MDRS), and as a result they were able to receive support and engage in the creation of the Mars Society Peru.
- Victoria Alonsoperez (NPOC for Uruguay) was awarded the Best Young Inventor Award 2013 by the World Intellectual Property Organization (WIPO). She received the award at the International Telecommunication Union Telecom World 2013, Bangkok, Thailand in November.
- Two new NPoCs were established: Josue Cardozo dos Santos was appointed NPoC of Brazil and Avid Roman-Gonzalez was appointed NPoC of Peru.
- Brazil, Colombia and Ecuador launched satellites in 2013, showing the growth of the space sector in the region, and motivating youth and SGAC members to engage in science and technology.



Space Generation Fusion Forum Report

Fig. 1.



The second annual Space Generation Fusion Forum (SGFF) was held on 7-8 April 2013 at the Broadmoor Hotel in Colorado Springs, USA. It brought together top students and young professionals from all over the world to focus on key space topics.

The SGFF brought delegates together for one and a half days. During the first day, senior space industry professionals presented their views on space policy issues and gave relevant advice to the delegates. The first day concluded with a networking reception attended by both participants and speakers, allowing the audience to exchange their thoughts in a relaxed atmosphere and discuss the various topics raised by the speakers.

On the second day, four panel sessions were conducted:

1. Long Term Sustainability of Space
2. Operational Data Exchange and Sharing of Space Assets
3. Innovative Space Exploration Strategies
4. Regional Space Programmes: Benefits and Risks

The SGAC panellists were chosen for their relevant experience and knowledge of the topics covered. Panellists prepared materials for discussion relevant to their panel topic. During the hour-long discussions, the audience actively participated, voicing their opinions and asking questions to the panel and other delegates during a question and answer session.

The SGFF concluded with a vote for the Most Valuable Participant (MVP). The winner, Lewis Groswald (USA), presented the Fusion Forum's report and findings at the American Institute of Aeronautics and Astronautics (AIAA) Space 2013 Conference in California in September 2013. The delegates also took part in the Opening Ceremony and Opening Reception of the National Space Symposium on April 8.

The SGFF was hosted by the Space Foundation in conjunction with the National Space Symposium. Nearly half of the Fusion Forum participants attended the Symposium, along with more than 9000 international space professionals. The SGFF participants were also invited to New Generation events held throughout the week.

speakers and moderators

Leroy Chiao	<i>Special Advisor - Human Spaceflight, Space Foundation</i>
Carissa Christensen	<i>Managing Partner, The Tauri Group</i>
Richard Dalbello	<i>Vice President, Government Affairs, Intelsat General Corporation</i>
David Finkleman	<i>Senior Scientist, Center for Space Standards and Innovation (CSSI), Analytical Graphics, Inc. (AGI)</i>
Mark Kinnersley	<i>Director, MPCV ESM Resident Liaison at Astrium North America</i>
Lon Levin	<i>President, SkySevenVentures & co-founder, XM Satellite Radio</i>
Elliot Pulham	<i>Chief Executive Officer, Space Foundation</i>
Victoria Samson	<i>Washington Office Director, Secure World Foundation (SWF)</i>
Mark Sirangelo	<i>Corporate Vice President, Sierra Nevada Corporation & Head, Sierra Nevada Space Systems</i>
Roger W. Teague	<i>Director of Strategic Plans, Programmes and Analyses, Headquarters Air Force Space Command</i>
Johan Dietrich Woerner	<i>Chairman of the Executive Board, German Aerospace Center (DLR)</i>

Please see www.youtube.com/user/spacegeneration for selected presentations.

PANEL 1 – LONG TERM SUSTAINABILITY OF SPACE

Fig. 2.



Delegates of Panel 1, Joyeeta Chatterjee (India), Alex Karl (Germany), Dan Hendrickson (USA) and Justin Kugler (USA)

The last 50 years have seen a significant increase in the usage of space, both in terms of the number of actors (including both public and private entities) and the volume of space assets launched per actor. As the space arena becomes more crowded, changes are required to ensure its long-term sustainability. Of particular interest is the growth in the number of developing space entities, the increased risk from space debris and new international norms of responsible behaviour in space.

The panel addressed the legal aspects of space debris, the growing problem of radio frequency interference, the impact of emerging space nations on space sustainability and suggested international norms of responsible behaviour in space.

The main conclusions of the panel were:

Space debris and radio-frequency interference pose significant challenges for the space industry. The key aspect to overcoming these issues is in wide-scale cooperation across all international players. According to the panel, such cooperation and involvement in decision-making must include the input of both emerging and established space nations, and legislature must be established to support this. Furthermore, a greater sharing of asset orbital information and improved tracking systems would give better knowledge and thus improved opportunities for collision avoidance, while sustainable design practices can be used to free up the most valuable orbits.

PANEL 2 – OPERATIONAL DATA EXCHANGE AND SHARING OF SPACE ASSETS

Fig. 3.



Delegates of Panel 2, Natassa Antoniou (Greece), Michael Brett (Australia), Thu Throng Vu (Vietnam) and Jon Vince (Canada) with Moderator Richard Dalbello (Intelsat)

The panel discussed threats to the development of the space economy and existing commercial structures (such as the Space Data Association) for mitigating those threats. In particular, the panel focused on secure mechanisms for sharing space data that allow for better management of the space environment. In discussing the mechanisms, panellists brought experiences and expertise in data sharing in many parts of the space industry, discussing the barriers to exchanging technical and competitive data.

The main conclusions of the panel were:

Operational data exchange and the sharing of space assets are important for the future of space activities, as they bring benefits to all participants in the shared operating environment of space. They will help to create an environment for collaboration among countries and build trust among participants. This is especially important for new players. However, some barriers need to be addressed, particularly in the areas of law and policy. Existing mechanisms and examples should be referenced, and SGAC can contribute by assisting with political and programmatic solutions to the stated problems.

PANEL 3 – INNOVATIVE SPACE EXPLORATION STRATEGIES

Fig. 4.



Delegates of Panel 3, Sirisha Bandla (USA), Ross Findlay (UK), Pascal Renten (Germany), Kris Lehnhardt (Canada), Samantha Marquart (USA) with Moderator AC Charania (Virgin Galactic)

The commercialisation of the space sector is now a reality. Current and emerging players are becoming more involved in exploration programmes for profit, such as asteroid mining and the colonisation of Mars. This panel discussed the social, technological, and economic benefits and pitfalls of commercialising exploration, the development and growth of new markets, and the ethical implications of commercialising space exploration.

Among the topics that panellists addressed were: the means to overcome the technical and institutional barriers to large-scale exploration activities, opportunities for future exploration missions presented by current commercial and agency-led space activities, and new proposals and trends that promise to foster innovative exploration activities of the future.

The main conclusions of the panel were:

While humanity's exploration of space seems to have stalled since the Apollo lunar landings of over four decades ago, today there exist more diverse pathways for us to explore space than ever before. The panel noted that significant institutional, political, and technical obstacles to large-scale exploration missions persist, but they also proposed several means to overcome these challenges. Moreover, the panel drew attention to important new trends and technologies that actors, both established and emerging, encounter that hold unprecedented opportunities to discover and expand humanity's reach into space.

PANEL 4 – REGIONAL SPACE PROGRAMMES: BENEFITS AND RISKS

Fig. 5.



Delegates of Panel 4, Alanna Krolikowski (Canada), Yusuke Muraki (Japan), Tilo Kauerhoff (Germany) and Lewis Groswald (USA) with Moderator Norimitsu Kamimori (JAXA)

The era of national competitiveness may be waning with a shift towards a focus of regional space programmes. In particular, emerging countries in regions where the space sector is rather new, such as the Asia-Pacific, are becoming more influential. This panel discussed the benefits and risks of having regional versus national space programmes, the need of new international space policies and laws, and the ways in which competitiveness versus collaboration can influence the future of global space activities. The panel focused on the advantages and disadvantages of regional space programmes, regional space programmes in Europe as a best practice, and of those in Asia and the Pacific.

The main conclusions of this panel were:

Regional space programmes are important for the future of space activities, which have been facing severe budget cuts, and for the increase in access to space by emerging countries that do not have the budget to maintain a national space programme. The European case is a good example of how a regional space programme can benefit member countries. However, there are also risks and disadvantages of such a regional space programme in regions such as Asia-Pacific. In order to identify a realistic structure for a regional space programme, not only must benefits and risks to local space activities be considered, but also the national and international politics of the region.

fusion forum statistics

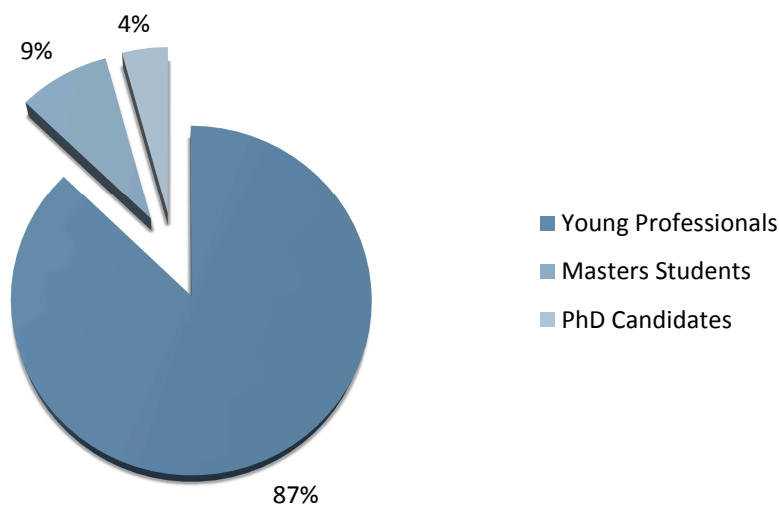
Forty seven delegates participated in the SGFF 2013.

8 participants from 7 countries were given scholarships to attend, which helped to broaden the international makeup of the forum and allowed delegates to interact with people from many different countries and backgrounds. The age range of selected delegates was from 23 to 35. Of the delegates who attended, 38% were female and 62% were male.

The majority (87%) of the attendees were young professionals, with the remaining 13% currently studying at universities across the world. Of the student participants, 67% were Master's students and 33% were Ph.D. students. The young professional attendees came from a variety of space related fields such as aerospace medicine, space law, space policy, engineering, and science. Delegates represented commercial and non-profit organisations, space agencies and universities.

Fig. 6.

Professional Status of Fusion Forum Delegates



Representatives of 15 countries participated in the SGFF. The highest percentage of delegates came from the USA; participants represented both nations with developed and developing space programmes.

Fig. 7.



Fig. 8. Fusion Forum Delegate Citizenship

Country of Citizenship	Number of Delegates
Australia	1
Argentina	1
Canada	4
Colombia	1
Ecuador	1
France	1
Germany	3
Greece	1
India	1
Japan	1
Netherlands	1
Spain	1
UK	1
USA	28
Vietnam	1
Total	47

Space Generation Congress Report

Fig. 9.



Delegates at the 12th Annual Space Generation Congress in Beijing, China

The Space Generation Congress (SGC) is the major annual meeting of SGAC. Participants are top university students and young professionals with a passion for space. The three days of SGC 2013 brought together both young and experienced students, as well as professionals in the space sector. They travelled from 38 countries for an inspiring and resourceful engagement with their peers. The event was hosted at Beihang University in Beijing, China from 19 to 21 September. The congress took place just prior to the 64th International Astronautical Congress (IAC).



The SGC was attended by 116 delegates. This year's registration attracted applicants from over 58 countries, which demonstrates SGAC's ever-growing network of international members, as well as the high calibre of the organisation and its events.

Delegates were exposed to perspectives on space issues from the world's leading space organisations, including the International Astronautical Federation (IAF), National Aeronautics and Space Administration (NASA), and the United Nations Committee on the Peaceful Uses of Outer Space (UN COPUOS).

Similarly, leaders from these space organisations had the opportunity to learn of fresh, innovative and bold perspectives from the incoming space generation on the five main themes of SGC 2013: Industry, Agency, Society, Exploration and Earth Observation. SGC 2013 was supported by several sponsors and organised by a committee of volunteers from across the globe. The 2013 Space Generation Congress would not have been possible without our supporters and dedicated volunteers, and SGAC would like to express its gratitude and appreciation.

speakers

Charles Bolden	NASA Administrator
Carissa Christensen	Managing Partner, The Tauri Group
Markus Enenkel	FFG/Bmvit Space Applications Competition Winner
Kiyoshi Higuchi	President of the International Astronautical Federation (IAF)
Yasushi Horikawa	Chairperson of UN COPUOS and Technical Counsellor at JAXA
Michael K. Simpson	Executive Director, Secure World Foundation
John Karas	Vice President and General Manager of Human Spaceflight at Lockheed Martin
Kathy Laurini	Senior Advisor at NASA
Martin Leitgab	International Space Solar Power Competition Winner
Mazlan Othman	Director of United Nations Office for Outer Space Affairs (UNOOSA)
Elliot Pulham	CEO Space Foundation
Dorin Prunariu	President of Association of Space Explorers (ASE)
Massimo Vetrivano	2013 Move and Asteroid OHB-SGAC Competition Winner
Jingnong Weng	Vice Dean, International School Beihang University
<i>Confirmed but unable to attend:</i>	
Junichiro Kawaguchi	Hayabusa Project Manager, JAXA
Sandy Magnus	Executive Director of the AIAA and former NASA Astronaut

At the core of SGC 2013 were the working groups, where delegates discussed their views on the development of space and prepared a set of recommendations to be published internationally by SGAC. Each working group produced a report on their discussions and recommendations, which will be shared with the United Nations as well as SGAC sponsors, members and alumni from around the world. SGAC would like to thank the key session supporters, NASA SCan and the Secure World Foundation for making these SGC working groups possible.

Industry – Space Industry in the Era of the Globalisation

Supporter: N/A

Subject Matter Experts: Alanna Krolikowski (Canada) and Paul Guthrie (USA)

Moderator: Sandra Gonzalez Diaz (Spain)

Industry has to adapt to the current economic situation of high financial uncertainty. Investors are setting lower value on high-risk, long-term projects. This is creating a situation of capital scarcity in the space industry that, together with the lower volume of projects in the backlogs of contractors, is hindering the future competitiveness of the industry. Competition and reduced project budgets put big space equipment providers under pressure and are triggering the appearance of more small/medium sized companies, especially in developing countries.



Launch of Shenzhou 10

Industrial companies play an important role in a globalised world, acting as mediator between space-faring nations and developing countries. The potential of these relationships can be relevant for strengthening ties between countries on political or economic levels.

During the SGC industry group sessions these topics were discussed and lead to the following recommendations:

- Customer focus: At early stages of development, to commit resources to generate reliable insight into customer demand and use cases, as well as to involve users in product development.
- Entrepreneurship: Explore and integrate, where appropriate, best practices from adjacent high-tech industries to foster innovation.
- Internationalisation and industrial partnership: Invest in international public-private partnerships to efficiently determine interfaces, form standards, and solve other technical issues that individual governments and firms cannot address alone. In addition, take full advantage of new low-cost, small-scale technologies to build international partnerships.
- Knowledge management: Adapt knowledge management models to actual employment patterns by exploring new software tools for effective knowledge management; foster a closer work environment between professionals at all levels of experience; and prioritise the development and long-term training of young professionals in project management strategy.

Fig. 10.



Delegates working during the Working Group Sessions

Agency – Space Communications in our Daily Life

Supporter: NASA SCan

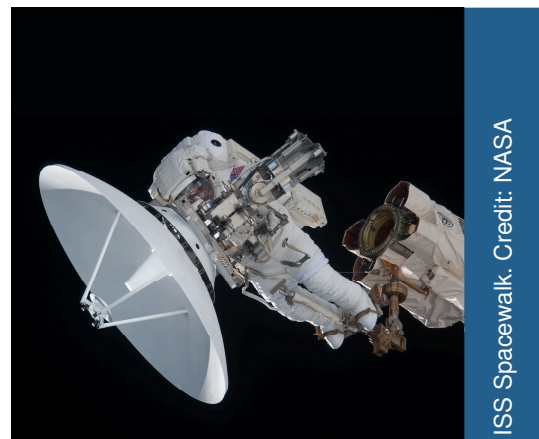
Subject Matter Expert: Stephanie Wan (USA)

Moderator: Katrina Laygo (USA)

The Agency Working Group discussed the benefits of space communications in daily life and strategies for conducting outreach to increase awareness of such benefits. Space communication plays an important role in society and in our technological world. In light of this, it is remarkable how little the public is aware of space communication and its benefits. The connection between space applications and, in particular, space communications and services are unknown to a large part of the population. Therefore, efforts to raise awareness should reach people from a variety of backgrounds, as well as different nationalities and age groups.

The group examined the stakeholders in space communications and developed a detailed outreach strategy. This included a definition of the content to be communicated to stakeholders, as well as new media tools to be used. They concluded that an educational, dynamic, and integrated video, image, and game application campaign would be the most effective means of targeting and engaging stakeholders.

The group recommended that the most successful means of integrating this video, image and game campaign would be by utilising a neutral coordinating organisation, such as SGAC, when facilitating stakeholder outreach in the working group members' respective countries. The group recommended collaboration with existing outreach campaigns, such as NASA's International Space Apps Challenge and UK Catapult "Future Cities" as strategies for funding. They recommended that the outreach strategy be divided into several short, medium, and long term efforts, as this would provide an



ISS Spacewalk. Credit: NASA

interesting chance of return on investment if stakeholders, such as satellite communications providers, were to consider participating in the short term efforts discussed by the group, thus establishing a basis for medium and long-term outreach phases.

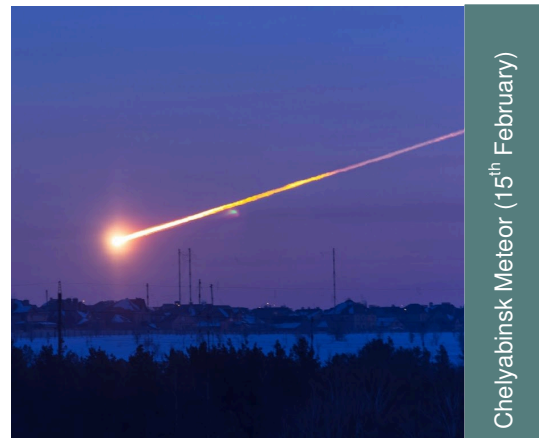
Society – Near Earth Objects, Impact in Society

Supporters: Secure World Foundation

Subject Matter Expert: Ray A. Williamson (USA)

Moderator: Bruno Sarli (Brazil), Zhuyan Lu (China)

The Society Working Group discussed how nations and international organisations can efficiently inform the population in case of a Near Earth Object (NEO) threat. In addition, it was also discussed how current media can help or hinder this endeavour. The working group based its discussion on the report submitted by the Action Team 14 (AT-14) at the UNCOPUOS and on the Secure World Foundation's paper titled, "Crafting an effective communications plan for an international response to a threatening Near Earth Object".



To successfully and efficiently deliver information about NEO threats, the working group addressed four main issues:

- How to define an effective communication plan to prepare governments and the public to respond to the potentially hazardous NEOs
- How to implement a coordinated programme of education targeting the public, policy makers, students, and media
- How to define criteria to identify communicators to be used to deliver NEO threat information effectively and avoid misinformation
- How to access NEO Research data and real-time information

The working group recommended to work with existing organisations to deal with the communication process. The group acknowledged the effort carried out by AT-14 and endorsed their recommendations to support the development of the International Asteroid Warning Network (IAWN) and Space Mission Planning Advisory Group (SMPAG).

The group presented the following recommendations:

- An effective communication plan should foresee long, medium and short-term actions to cope with the NEO threat at different stages. Long-term action will target the general public to raise awareness and foster scientific education. At this stage, the plan should be implemented by local governments in accordance with the guidelines provided by IAWN. SGAC can greatly contribute at this stage, continuing its outreach activities and also translating the material into additional languages in order to reach a wider audience. Medium-term action will require decision-makers to develop contingency plans in the remote case of a highly probable impact. Short-term actions will directly target the general public and governments using the preparation and training learned from medium/long-term communication strategies to mitigate the consequences of threats. The group also recommended implementing new tools to directly connect the NEO threat to a procedure to be executed on ground in order to mitigate the risk.

- An effective educational plan should consist of implementing a multi-level strategy addressing different ways of providing the population with correct and factual information. The plan should implement a “media training” element with the support of universities, agencies and institutes, to produce NEO threat related TV-series, movies, advertisements and other similar media, with the guarantee of factual correctness of the material presented. Accredited organisations and international groups should aid policymakers in responding to a NEO threat and its possible consequences. In addition, schools, museums, planetariums and virtual forums should play an important role in the education of students and the general public. Where the general public could not access these kinds of activities, the group recommends getting NGOs involved in contributing to the process through community gatherings and other tools already in place for other types of emergencies.
- Taking into account the differences between nations and their available infrastructure, every nation should identify possible communicators and implement impact risk management within its own emergency service unit(s). Emergency responders should be educated on the specific threats of asteroid impacts. This highlights the importance of an Impact Disaster Planning Advisory Group (IDPAG) functioning under an SMPAG to coordinate international activities and to support national efforts. In the initial phases, national emergency service units should contact and receive information from a UN IDPAG. In the event of a short-term threat, emergency service units should start an awareness campaign to inform the public of the threat and about possible mitigation measures. As a long-term response, IAWN should act as a central body for information and international communication between countries.

Fig. 11.



Members of the Society Working Group

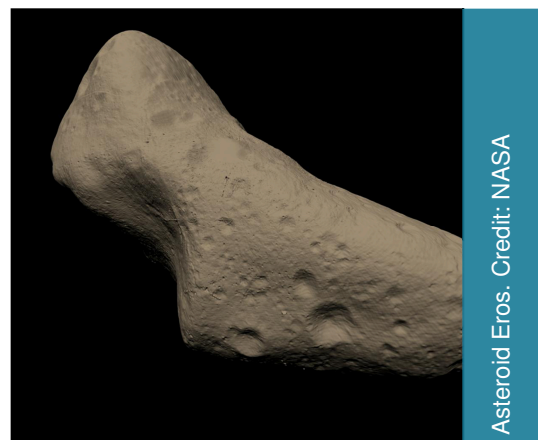
Exploration – Exploitation of Space resources: Legal and Political Implications

Supporter: N/A

Subject Matter Expert: Matt Maniscalco (USA)

Moderator: Jeroen Van den Eynde (Belgium)

The Exploration Working Group examined the emerging space resources industry and the political, legal and social challenges that it faces. The group discussed the need for and application of such an industry, agreeing that there are numerous benefits to humankind. It is evident that companies such as Deep Space Industries and Planetary Resources are developing technologies to mine celestial bodies, however provisions of the current international



Asteroid Eros. Credit: NASA

space law treaties, such as the Outer Space Treaty, Liability Convention and Moon treaty, leave uncertainties about private ownership of what is mined, potentially preventing the progression and development of the industry.

The group also discussed what is socially acceptable in terms of space mining, specifically with consideration to protecting the environment and unique heritage of space, while enhancing scientific research.

The group made the following recommendations based upon their conclusions:

- Due to ambiguities in the property rights of celestial bodies, a clearer interpretation of terms in the Outer Space Treaty is required.
- An impartial, international body should be formed and tasked with addressing the scientific, cultural and environmental concerns involved with space mining. Such a body would implement a regulatory framework to protect the common heritage of humankind.
- Liability for space operations currently falls to the launching state. It was deemed that this places an excessive burden on these states limiting the growth of the industry. As a result it is recommended that a United Nations General Assembly resolution be amended which highlights the importance of the creation of national space laws to regulate the allocation of risks between states and private entities. Meanwhile, states should acknowledge limitations in the Liability Convention and attempt to solve these on both the national and international level.

Space mining has the opportunity to greatly further human progress through economic stimulation and technological and scientific advancement. The group believes that through appropriate regulation, both national and international, the benefits of space mining can be experienced while avoiding the possible detriments it could entail.

Fig. 12.



Members of the Exploration Working Group during the Working Group Sessions

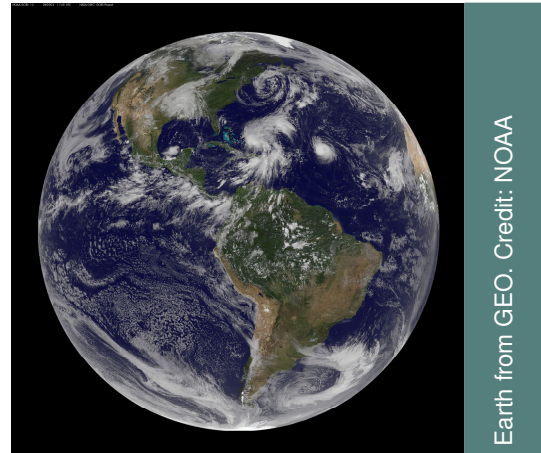
Earth Observation – Earth Observation for Sustainable Development

Supporter: SGAC's Anonymous Supporter

Subject Matter Expert: Yusuke Muraki (Japan)

Moderator: Jacob Sutherlun (USA)

The Earth Observation working group discussed the challenges and possible solutions of earth observation for sustainable development in developing countries. In this context, the term “development” is not specifically focused on technology development but includes economic growth and poverty reduction. The main challenges identified by the working group were: data access and utilisation, lack of awareness, lack of technical capacity, and lack of coordination and political will.



The group discussed the use of Earth Observation applications for sustainable development. Major Earth Observation application areas where developing countries could benefit are: disaster relief, agriculture, medicine, urban planning, weather forecasting, and communication. Smaller areas of interest include oil theft, bunkering, piracy, illegal fishing and maritime security.

The working group developed the following recommendations and conclusions:

- Data access and utilisation: A data-sharing framework should be developed and include an expanded version of the current framework for disaster emergency response. The data-sharing mechanism must also be based on contribution from member countries, and include the participation of developing countries. The private sector must also be encouraged to participate in international initiatives.
- Policy: Best practices from developed countries on the use of Earth Observation data for sustainable development should be shared to increase effectiveness in developing countries. In addition, government-funded cost/benefit analyses should support policymakers' ability to understand the benefits of Earth Observation in developing countries.
- Awareness: User awareness must be increased, but also the awareness of the established space community in terms of new user needs.
- Technical capacity: Templates for STEM education can be used, and the sharing of job creation techniques and technical exchanges to establish skilled domestic workforces in the countries where these skills are required most.
- Avoiding duplicative efforts: Domestically, the roles and responsibilities amongst agencies must be clarified in individual countries; internationally, efforts must be better co-ordinated through, for example, formal agreements, workshops, and online information sources.

Fig. 13.



congress statistics

SGAC closed registration for the SGC on 1st September, with more than 250 applications from 58 different countries.

After a diligent selection process, a total of 116 delegates participated in SGC 2013. Of those, 25 participants from 13 countries received scholarships from SGAC and its partners. There was a gender distribution of 31% women and 69% men, an achievement that is uncommon for events in the space sector. Delegates came from varying backgrounds, with 22% undergraduate students, 21% masters students, 16% PhD students, and 41% young professionals. SGAC believes that these statistics truly demonstrate SGAC's international influence, and that it continues to grow. This development gives SGAC the momentum to establish a distinct and highly representative network of young space professionals and university students.

SGAC is also pleased to have welcomed delegates from an array of countries and regions. SGC 2013 attendees came from more than 38 countries across six continents. This internationalism is a major contributor to the development of a truly international voice of the space generation that SGAC strives to epitomise.

Fig. 14.

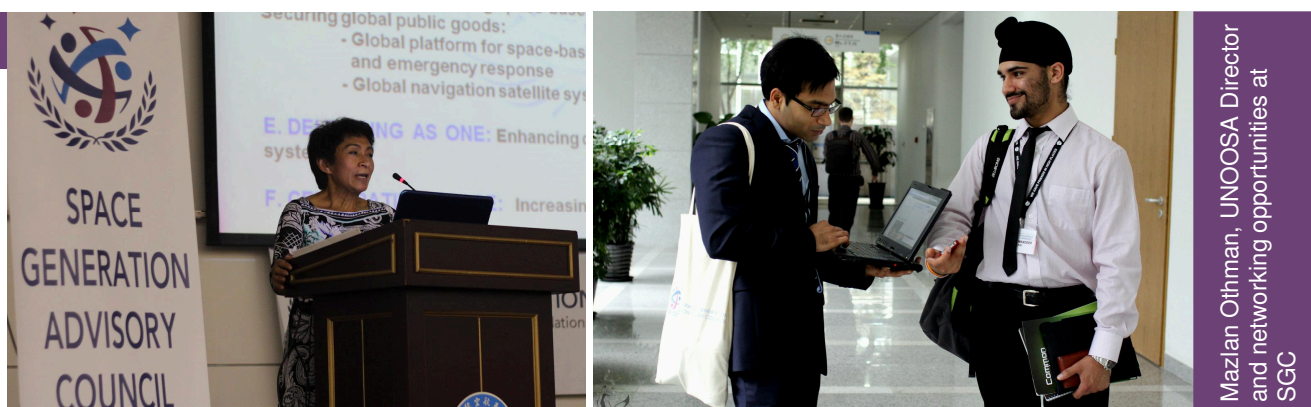


Fig. 15.

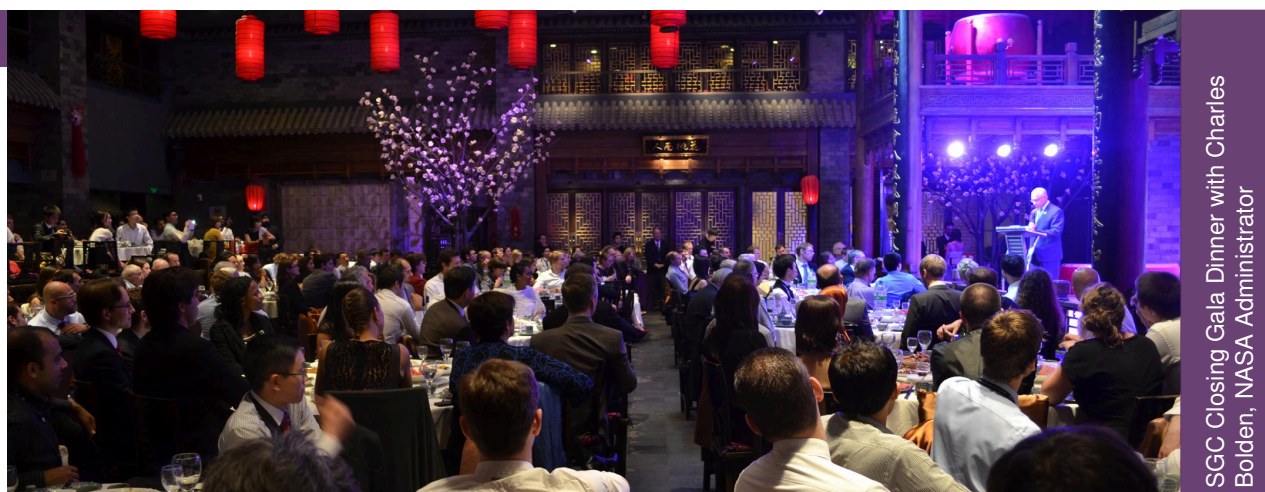
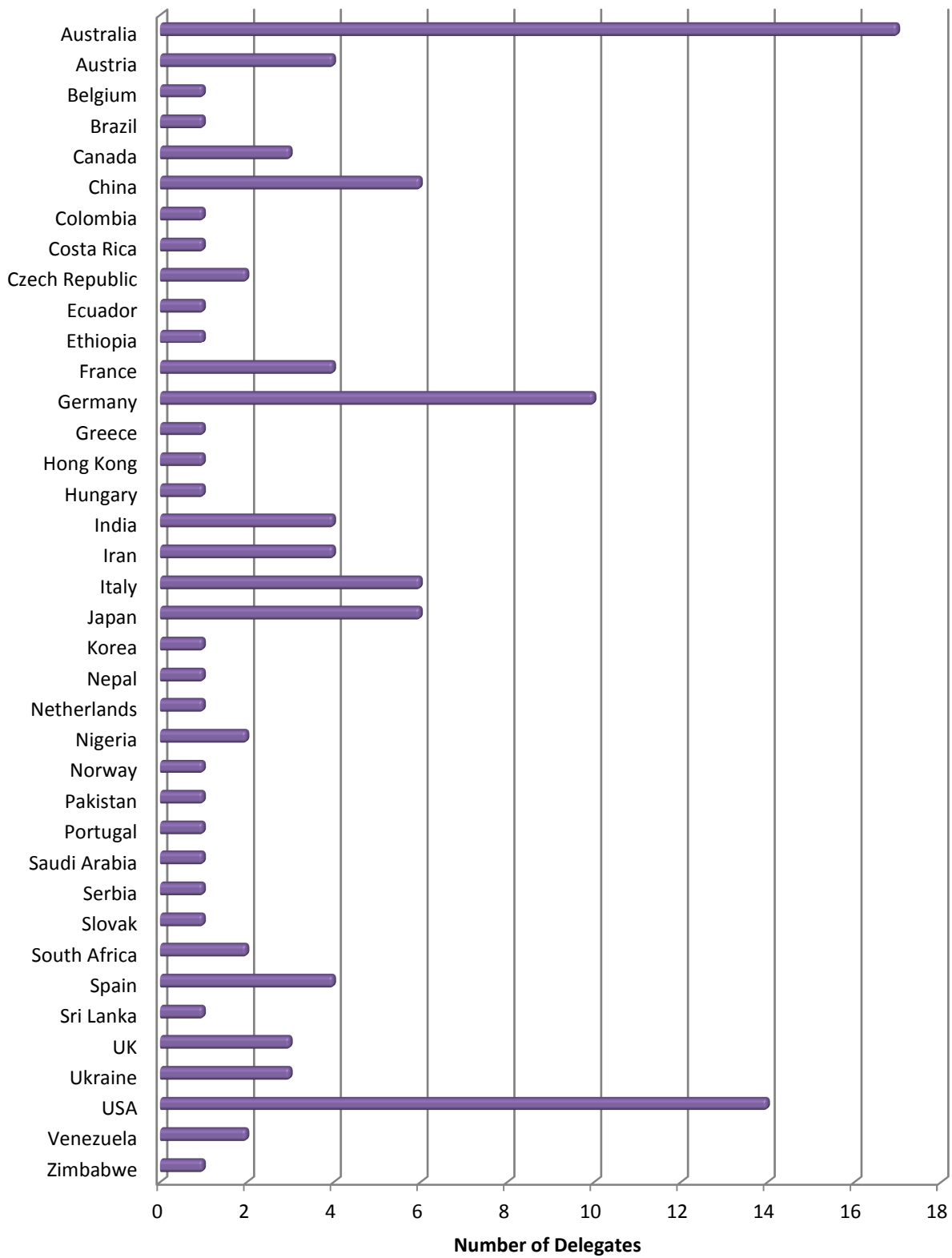


Fig. 16.

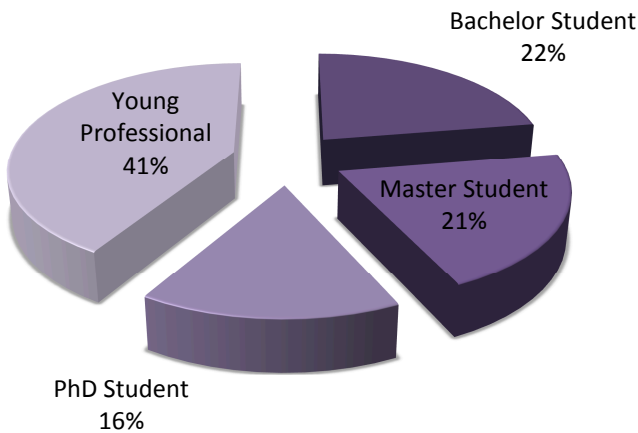
SGC Delegate Citizenship



Whilst the majority of SGC delegates were students, 41% were young professionals working within industry, in postdoctoral positions or working in space agencies.

Fig. 17.

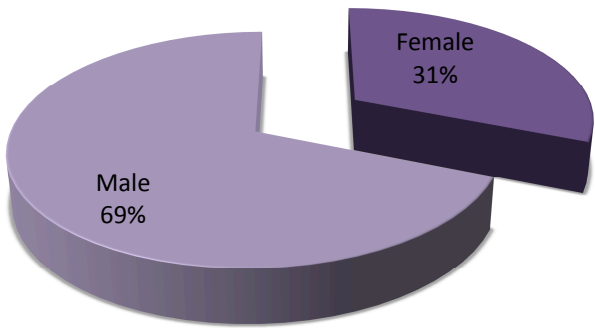
Professional Status of SGC 2013 Delegates



SGAC is proud to have relatively even gender distribution amongst the SGAC Team. However, the pool of delegates at SGC 2013, represented a bit less balanced distribution than in the past with only a 31% female representation. SGAC hopes to increase the participation of female in future events.

Fig. 18.

Gender of SGC 2013 Delegates



Review: SGAC 2013 Strategic Goals

Overview

The SGAC Strategic Plan 2013 published in January, outlined nine goals for the year ahead. This section of the Annual Report is the Executive Office's self-assessment of how SGAC fulfilled these goals. This assessment is intended to provide an additional view on the content of SGAC's activities throughout the year and inform readers about the development of the Strategic Plan for 2014.

Strategic Goal Review

1. *Continuation of efforts towards financial stabilisation*

Output: Sustained financial stability due to strong relationships with sponsors and additional funding resources.

SGAC operated a strong financial base throughout the year to minimise the effect of the loss in 2012. The organisation stabilised financially, making up for the loss of the previous year to continue the positive trend over recent years. SGAC also welcomed new organisations and industries as new sponsors and supporters, demonstrating a growing interest of the space sector in young professionals and students.

All accounts were paid on time, and the Executive office has been confident of its ability to operate throughout the year. Changes to SGAC's financial operations throughout 2013 included introducing a new online bookkeeping system, transitioning a new treasurer to the team, and updating our transaction authorisations to allow for more flexible banking.

The major goal of securing multi-year contracts with main sponsors was not accomplished. Unfortunately, many of our sponsors are constrained in their ability to enter into such contracts and are only able to support the organisation on a year-by-year basis. Financial stability will be achieved by maintaining a close and trusted relationship with our major sponsors. However, we believe that some of the new relationships could be nurtured to develop into multi-year contracts.

Another aspect of this objective is to save sufficient funds to maintain a balance in excess of SGAC's immediate operational needs – this objective is yet to be realised. However, there are sufficient funds to support a paid Executive Director position, interns, and an operational office space, for at least one year into the future.

2. *Successful execution of the Space Generation Fusion Forum 2013*

Output: Engage SGAC members and stakeholders in preparation for the SGFF. Seek input to increase the feasibility of this new space event for students and young professionals to be held in the US beyond 2013 and aid the general framework and purposes of SGAC's development. The SGFF 2013 edition was a resounding success. For the first time, the organisation employed the services of a Congress Manager other than the Executive Director to take full charge of the event. The organising team comprised mostly of local SGAC members who played their various roles efficiently to ensure the success of the event. We can proudly say that SGAC members and stakeholders have no doubts about the immense benefits for students and young professionals that SGFF has in store for all participants.

The SGAC signed an agreement with the Space Foundation this year to ensure the third edition of the Space Generation Fusion Forum as evidence of the successful relationship between organisations and the mutual benefits of this event.

The SGAC intends to hold this event annually, and will continue to report at the Space Symposium, bringing the voice of young professionals and students to a broader audience.

➤ **3. Successful execution of the 2013 Space Generation Congress**

Output: Report on a successful SGC event which is measured by the number of delegates, diversity in their backgrounds and country of origin, the number of scholarships, and the quality of the output: final SGC presentations and SGC Final Report.

The Space Generation Congress (SGC) held in Beijing, China, in September 2013 was an overwhelming success, with a great number of delegates and a strong programme of events. The organisational committee overcame a number of logistical risks and successfully hosted the first SGC in China. The SGC gathered 117 delegates coming from 38 different countries, with diverse backgrounds and professional statuses (41% YPs, 22% Bachelor Student, 21% Master Student, 16% PhD Student). SGAC was able to award 25 scholarships to participants coming from 23 different countries.

The attention generated by the event, particularly from world space leaders and former astronauts, and the support of organisations, greatly contributed to the overall success of SGC 2013. The SGC Closing Gala Dinner was a major success this year, attended by 210 people comprising young professionals, students, industry and academia leaders, and heads of space agencies. The decision to open the gala dinner to former attendees and potential partners by selling seats and tables was positively received, and will be a consideration for coming years. The SGC Final Report was completed with a high level of quality, which met our expectations and goals.

➤ **4. Focused development and strategic realignment of SGAC's year-round projects**

Output: Project groups in line with the developed SGAC project group set-up guidelines were established. A comprehensive project group structure will be designed and implemented to assign accountability for various tasks. An advisory team will also be appointed per project group that will help direct the affairs of the group. This will ensure smooth running of project groups, improve their professional outlook as well as set them on the path to be an independent entity in the long-term. Project groups will have signed agreements with their respective partners/sponsors to cement the relationship. Mechanisms will be investigated and developed to propagate the results of their work, and promote active members to participate in various space events.

In 2013, SGAC's project groups have continued to become stronger in terms of membership and output; accountability for tasks within the groups have been well allocated and members have presented many quality outputs at various global space conferences.

One new Project Group has been created in 2013: the SGAC Space Law Project Group, who will focus on policy and law matters of the space sector.

In general this year, the Projects Groups have presented more than 20 papers and presentations at conferences such as the IAC, and have continued working towards educational and outreach purposes.

Its social media presence has also increased, providing extra information and increasing the interest of the general public on the seven topics of the SGAC Project Groups.

SGAC members have continued to show increasing interest in the project groups. Two new project coordinators who are capable of ensuring smooth running of the projects were appointed. Also, a

mandatory two-year term has been implemented for project leads as this will aid the infusion of fresh ideas at the group management level. Some project groups have built lasting relationships with other organisations that have supported project group members to attend space conferences.

The impact of the outputs of the Project Groups is growing, not only when presenting papers at different conferences as mentioned, but also organising particular events on specific topics, and contributing actively to big institutions such as the International Committee on GNSS, the Action Team 14 of the UN, the UN SPIDER, and others.

➤ **5. Deepening of relationships with partner organisations**

Output: Formalise relationships with existing and new partner organisations through Memorandums of Understanding that outline the long term benefits of collaboration.

2013 was particularly fruitful in formalising SGAC's relationships with existing and new partners, including Memorandums of Understanding with the following organisations:

- Beihang University
- Future Space Leaders Foundation
- QB50 Project, Von Karman Institute
- Satellite2014
- Space Foundation
- SpaceTec
- World Space Week Association
- Young ESA
- Young Ukrainian Space Industry Workers

SGAC is also already working on a few other agreements, which, hopefully, will be signed during the first semester of 2014.

➤ **6. Development of a database improving alumni relations**

Output: Consolidation of the database of former members and reactivation of relationships with them, particularly in the context of SGAC events and on-going projects.

SGAC has held the first series of meetings to develop an alumni database. The great value and potential of this database is already recognised by the Advisory Board and the SGAC Executive Council. The first proposal to develop this database was drafted, and got the interest of many former SGAC members to keep involved with the organisation.

The SGAC 2014 Strategy document will reflect immediate and future plans to start implementing this database.

➤ **7. Consolidation of the SGAC membership Database**

Output: Consolidation of SGAC's membership database built from past events, accurate membership statistics and ease of retrieval of membership information.

The SGAC has transitioned to a new website. This new website allows the organisation to maintain a more accurate database. After initial difficulties, the original SGAC database from the old webpage has been integrated into the new database. Additional security measures have proven necessary to protect the site against hacking and spam bots.

In 2013, a first review of existing databases has been carried out, based on the activity/inactivity of some registered members. The first tentative results show that SGAC is comprised of a healthy network of 5000 members (over 2500 accounts on the site, 1000 former attendees in event's databases and over 2000 subscriptions), and growing.

The SGAC has also initiated some negotiations with a professional partner to work together towards developing and consolidating the SGAC membership database. The technical challenges of having a single, functional database integrated into our website with the required flexibility have been identified, and will lead to changes in the current system in the coming year.



SPACE GENERATION
ADVISORY COUNCIL

In Support of the United Nations Programme on Space Applications

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