



SPACE GENERATION
ADVISORY COUNCIL

IN SUPPORT OF THE UNITED NATIONS PROGRAMME
ON SPACE APPLICATIONS

THE SPACE GENERATION CONGRESS 2013: Perspectives from University Students and Young Professionals in the Space Sector



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BASIC FACTS ABOUT SGAC



Space Generation Advisory Council

SGAC is a non-profit organisation that represents 18-35 year olds in international space policy at the United Nations, at agencies, in industry, and in academia

- Founded as a result of the 1999 UNISPACE III conference
- SGAC has had permanent observer status in the UN COPUOS since 2001 and has been a member of the UN Economic and Social Council since 2003
- SGAC has a volunteer network of more than 4,000 members in over 90 countries





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SPACE GENERATION CONGRESS 2013



SGC Overview

- 19 -21 Sept 13 at Beihang University, Beijing, China, in conjunction with the International Astronautical Congress (IAC)
- 116 selected delegates from 38 different countries across six continents to discuss top space policy issues
- 25 participants from 13 countries were given scholarships
- Students and young professionals represented a wide spectrum of technical and non-technical space backgrounds



SGC Topics Overview

- SGC 2013 Working Group Topics
 - Industry
 - Agency
 - Society
 - Exploration
 - Earth Observation



Selected SGC Speakers

Charles Bolden,
NASA Administrator



**Yasushi
Horikawa,**
Chairperson of
UNCOPUOS



**Mazlan Othman, UNOOSA
Director**



Selected SGC Speakers

Dorin Prunariu,
President of
Association of Space
Explorers



Kiyoshi Higuchi, President
of the IAF



Michael Simpson,
Secure World Foundation
Executive Director





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SGC 2013 WORKING GROUP RECOMMENDATIONS



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INDUSTRY: Space Industry in the Era of Globalisation

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N/A

Industry Group Discussion Focus Areas



- Competition and smaller project's budgets → trigger the appearance of small/medium size companies, especially in developing countries
- The role of Industry in a globalised world, as mediator to bridge the gap in between the space fairing nations and developing countries.

Launch of Schenzhou 10.



Recommendations/Conclusions

- **Customer Focus:** Commit resources to generate reliable insight into customer demand and use cases, as well as involve users in product development.
- **Entrepreneurship:** Explore and integrate, where appropriate, best practices from adjacent high-tech industries to foster innovation.
- **Internationalization 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 to actual employment patterns by exploring new software tools for effective knowledge management; foster closer work environment between professionals at all levels of experience; and prioritize the development and long-term training of young professionals in project management strategy.

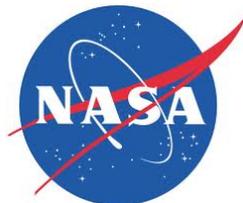




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AGENCY: Space Communications in our Daily Life

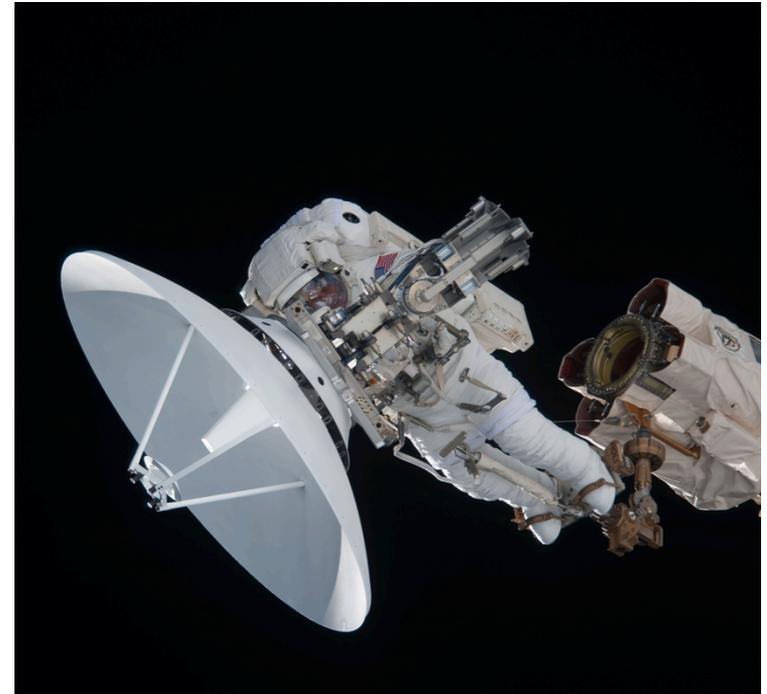
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NASA SCaN

Agency Group Discussion Focus Areas

- Discussion of the lack of awareness in society of the benefits of space communications
- Ways to raise the awareness of these benefits to people from a variety of backgrounds, nationality and age groups
- Outreach strategy development according to the stakeholders



International Space Station SpaceWalk. Credit: NASA



Recommendations/Conclusions

- Develop educational, dynamic, and integrated **video, image, and game** application campaign
- Most successful means of integrating this campaign by **utilising a neutral coordinating organization**, such as SGAC, when facilitating stakeholder outreach in the working group members' respective countries.
- **Collaboration with existing outreach campaigns**, (NASA's International Space Apps Challenge, UK Catapult "Future Cities") as funding strategies.
- The outreach strategy should be divided into several short, medium, and long term efforts, to provide an interesting chance of return on investment

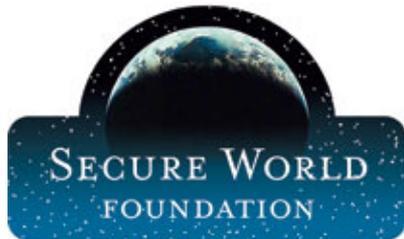




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SOCIETY: Near Earth Objects – Impact in Society

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Secure World Foundation

Society Group Discussion Focus Areas

- Define effective communication plan to prepare governments / public to potentially hazardous NEO.
- 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 avoiding misinformation.
- How to access NEO Research data and real-time information



Chelyabinsky Meteor (Feb 2013).



Recommendations/Conclusions

- **Effective communication plan:**
 - **Long-term:** target general public to raise awareness, foster scientific education
→ implemented by local governments in accordance to the guidelines provided by IAWN.
 - SGAC → support on outreach activities and translating the material in different languages
 - **Mid-term:** decision-makers to develop contingency plans for remote case of a highly probable impact.
 - **Short-term:** directly target general public / governments using preparation and training learned with medium/long-terms communication strategies to mitigate the consequences of threats.
- **Effective educational plan:**
 - Multi-level strategy addressing population with correct, factual information.
 - “Media training” with the support of universities, agencies and institutes, in order to produce NEO threats related TV-series, movies, advertisements and other similar media.
 - Accredited organisations and international groups would 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 general public.
 - Get NGOs involved in contributing to the process through community gatherings and other tools already in place.



Recommendations/Conclusions

- Every nation should identify possible communicators and implement impact risk management within its own emergency service unit(s).
- Educate Emergency responders on specific threats of asteroid impacts. The importance of an Impact Disaster Planning Advisory Group (IDPAG) functioning under an SMPAG is recognised
 - Initial phases, national emergency service units contact & receive information from a UN IDPAG.
 - Short-term threat, emergency service units start awareness campaign to inform public of the threat and about possible mitigation measures.
 - As a long-term response, IAWN should act as a central body for any information and international communications between countries.





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EXPLORATION: Exploitation of Space Resources: Legal and Political Implications

Exploration Group Discussion Focus Areas

- The difficulties of overcoming communications in space exploration
- The importance of communications in exploration programmes, telemedicine, crew support
- Challenges such as time-delay, as well as the importance of a crew's self-reliance during non-real-time communications with mission control



Parkes Radio Telescope. Credit: NASA

Recommendations/Conclusions

- Due to ambiguities in the property rights of celestial bodies, **interpretation of terms in the Outer Space Treaty** to permit the utilisation of space resources is required .
- Impartial, **international body** should be formed to:
 - address scientific, cultural and environmental concerns involved with space mining,
 - implement a regulatory framework to protect the common heritage of humankind.
- Liability for space operations should be amended by the UNGA (currently: launching state) to regulate allocation of risks between States and private entities. States should acknowledge limitations in the Liability Convention and solve both on a 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 and national and international input** the benefits of space mining can be experienced while avoiding the possible detriments that could entail.



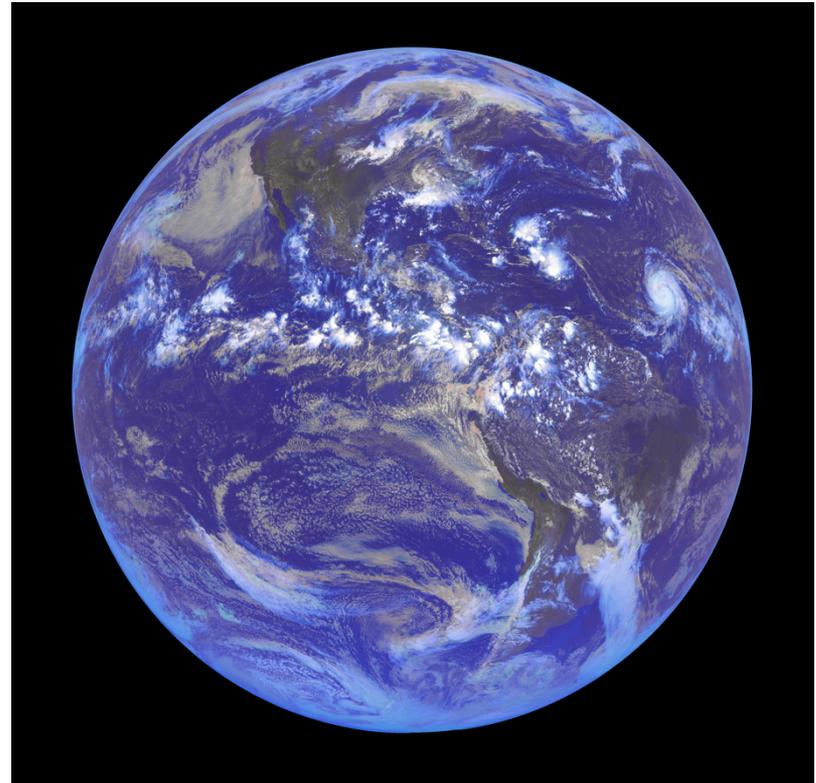


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EARTH OBSERVATION: Earth Observation for Sustainable Development

Earth Observation Group Discussion Focus Areas

- Challenges and possible solutions of earth observation for sustainable development in developing countries, including economic growth and poverty reduction.
- The main challenges identified by the working group are:
 - Data Access and Utilization,
 - lack of awareness,
 - lack of technical capacity,
 - lack of coordination, and
 - political will.



Earth from GEO. Credit: NOAA



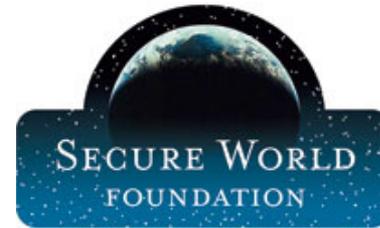
Recommendations/Conclusions

- **Data Access and Utilization:** promotion of data-sharing framework; Expand current framework for disaster emergency response to other phases; Make similar international frame work for other areas; create data sharing mechanism based on contribution from member countries including developing countries; encourage private sector involvement in international initiatives and fund a study for the benefits of sharing data through research.
- **Policy:** More investment on study and sharing of best practices on use of Earth Observation data for sustainable development in developing countries also more investment on development of cost – benefit analysis that supports policy maker’s ability to understand benefits of Earth Observation.
- **Awareness,** Increase user’s awareness on datasets and its benefits; Increase space community’s awareness on user needs.
- **Technical capacity:** form templates for STEM education; educate the educators; Brain Drain- share job creation techniques and promote technical exchanges with the condition skills are used domestically
- **Duplicative Efforts:** Domestically- clarify roles and responsibilities amongst agencies in an individual country; internationally – identify and share international efforts through workshops, web portals, etc.



Partners and Supporters of SGC 2013

Platinum



Space Communications & Navigations Group of NASA

Anonymous
Supporter

Gold



Partners and Supporters of SGC 2013

Silver



- Anonymous
- Mr A. C. Charania

Partners



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Thank you



SGC 2013 Delegates in Beijing, China

