



SPACE GENERATION
ADVISORY COUNCIL

IN SUPPORT OF THE UNITED NATIONS PROGRAMME
ON SPACE APPLICATIONS

THE SPACE GENERATION CONGRESS 2012: Perspectives from University Students and Young Professionals in the Space Sector

CONTENT

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- Space Generation Congress 2012
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 - Industry
 - Agency
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 - Earth Observation





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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 2012



SGC Overview

- 27-29.09.12 in Naples, Italy, in conjunction with the International Astronautical Congress (IAC)
- 134 selected delegates from 44 different countries across six continents to discuss top space policy issues
- 28 participants from 15 countries were given scholarships
- Students and young professionals represented a wide spectrum of technical and non-technical space backgrounds
- Topics: Industry, Agency, Society, Exploration and Earth Observation



Selected SGC Speakers

Marco Ferrazzani, Legal Counsel, Head of the Legal Dept., ESA



Berndt P. Feuerbacher, Former President of the IAF



William H. Gerstenmaier, Associate Administrator, Human Exploration and Operations Directorate, NASA



Selected SGC Speakers



Catherine Doldrina (SGAC Chair) with **David J.W. Kendall**, Senior Executive Advisor to the Canadian Space Agency (CSA) President; **Fransisco Mendieta Jimenez**, Director General, Mexican Space Agency (AEM); **Johann-Dietrich Wörner**, Chairman of the Executive Board of the German Aerospace Centre (DLR); **Cosimo La Rocca**, Advisor to the President, Italian Space Agency (ASI); **Kiyoshi Higuchi**, Vice President, JAXA, during the SGC “Fireside Chat”.





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SGC 2012 WORKING GROUP RECOMMENDATIONS



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INDUSTRY: Space Transportation

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N/A

Industry Group Discussion Focus Areas



- Space transportation and the role of the new European launch capability in the international sector

Launch of Vega. Credit: ESA



Recommendations/Conclusions

- Encourage established space-faring nations to strengthen their relationships with emerging space-faring nations to foster global growth and collaboration on launch efforts.
- Advocate for the development of launch capacities in new space nations to encourage global competition within the launch industry.
- Enable the emerging private sector to access and create markets to foster competition, innovation and efficient operation capacity.
- Support international efforts to promote national policies requiring launch vehicle operators to de-orbit upper stages.
- Support the creation of international mechanisms to introduce more safety and sustainability into launch vehicle operations and site practices.
- Explore opportunities to foster international trade and cooperation.





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AGENCY: The International Space Station

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LOCKHEED MARTIN



Agency Group Discussion Focus Areas

- The potentials for future maintenance of the ISS
- The implications and benefits of this extension at an international level
- The utilisation of the ISS as an analogue platform for human exploration, as well as outreach projects to promote the ISS



International Space Station. Credit: NASA



Recommendations/Conclusions

- Transform the ISS into a commercial facility
- Use the ISS as an analogue for a Mars mission
- The ISS as the main outreach tool to promote space agencies activities
 - Smartphone apps
 - Shuttle Carrier Aircraft Museum





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SOCIETY: Space for Humanitarian Relief

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Secure World Foundation

Society Group Discussion Focus Areas

- The way space data could help support humanitarian tasks focused on people who need assistance
- The way space is used in humanitarian efforts in conflicted areas and how NGOs are currently implementing space tools



Pakistan floods. Credit: GeoEye



Recommendations/Conclusions

- Work with UNOOSA and UN-SPIDER on a proposal to create a group called “Centre for Responsive Information for Safety and Security” (CRISIS) to act as an impartial, international coordinating body for providing space-based information in support of humanitarian relief.
- Develop an interface between users, data providers and the public by:
 - improving the use of technical, legal and cost standards;
 - increasing public awareness, visibility and participation; and
 - tailoring of the processing approach based on priority.
- Increase public awareness of UN-SPIDER work among experts, in particular to the young generation*.

*SGAC has started to implement this.

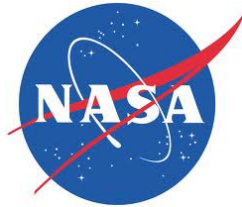




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EXPLORATION: Communications for Exploration

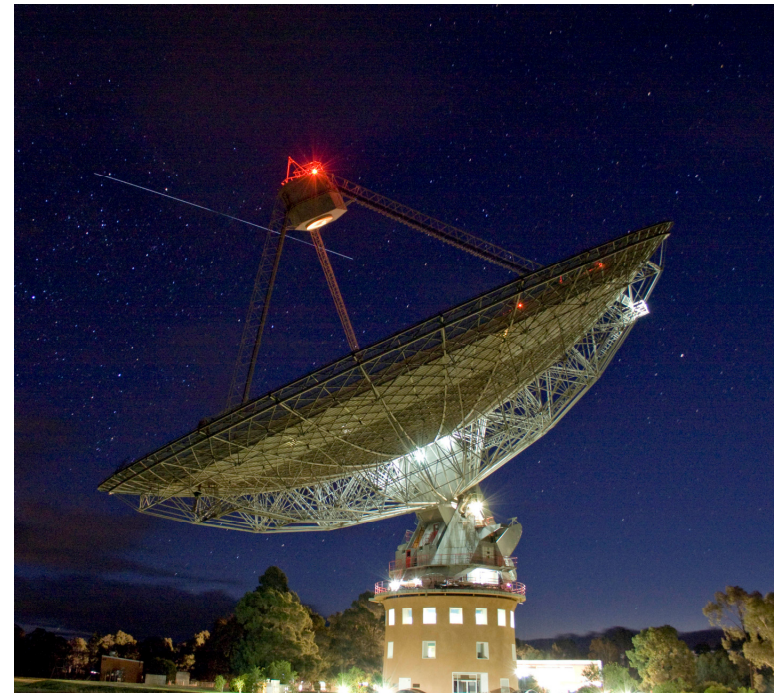
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NASA SCaN

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

- Special consideration should be given to Mars, with international cooperation identified as a key parameter.
- Take account of distance, time delays, accessibility, insufficient data rates and coverage, non-optimal utilisation of space resources, barriers concerning data sharing and the standardisation of related methodologies.
- Increase standardisation and globalisation of technologies through implementing backwards compatibility to help ease the transition into new technologies, and by incorporating communication protocols and a framework for private companies.
- Ensure the sustainability of Martian orbits through an internationally integrated network.





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EARTH OBSERVATION: Space Resources for Water Management

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SGAC's Anonymous Supporter

Earth Observation Group Discussion Focus Areas

- The ways in which space technology could contribute to the improvement of Earth's water management
- Previous water-related natural disasters that have occurred around the world and the national emergency strategies that followed
- Current space technologies for water management such as Earth Observation satellites and remote sensing
- How aware developing and developed countries are, of the capacity for space technology to improve water management



GOES-East satellite (combined) image of the Earth.
Credit: NOAA



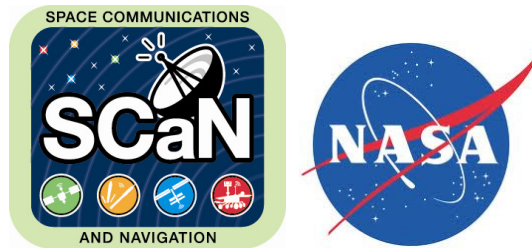
Recommendations/Conclusions

- Promote data sharing, collection and research to ensure continuity of data collection.
- Encourage standardisation of data formats.
- Increase the availability of data by ensuring low costs, reduced restrictions and streamlined access to data by users.
- Encourage incentives for data use by awarding scholarships, providing grants for data use and initiating competitions.
- Support applications by continuing programmes – such as the ISS SERVIR Environmental Research and Visualization System (ISERV) – to make use of data.
- Build on established regional initiatives, for example, ESA TIGER or Global Earth Observation System of Systems (GEOSS).
- Prioritise local capacity-building through cooperative or exchange projects and site demonstrations.
- Engage stakeholders by raising public awareness of the benefits of Earth Observation through the utilisation of social media, as well as integrating programmes into Science, Technology, Engineering and Mathematics (STEM) education.



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Platinum



Space Communications & Navigations Group of NASA

Anonymous

Gold



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Silver



SAPIENZA
UNIVERSITÀ DI ROMA

- Anonymous
- Dr Peter Diamandis
- Mr A. C. Charania

Partners



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Thank you



SGC 2012 Delegates in Naples, Italy

