THE SPACE GENERATION CONGRESS 2014:
Perspectives from University Students and Young Professionals in the Space Sector

IN SUPPORT OF THE UNITED NATIONS PROGRAMME ON SPACE APPLICATIONS

SPACE GENERATION ADVISORY COUNCIL
BASIC FACTS ABOUT SGAC
Space Generation Advisory Council

- 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
SGC Overview

- An official associated event of the International Astronautical Congress
- 128 selected delegates from 40 different countries across six continents to discuss pertinent space issues
- 25 participants from 8 countries awarded scholarships
SGC Topics Overview

- Entrepreneurship
- Cubesat Swams
- On-orbit Servicing
- Manned Exploration
- Earth Observation
Selected SGC Speakers and SMEs:

- Simonetta di Pippo – UNOOSA Director
- Yasushi Horikawa – Past UNCOPUOS Chairperson
- Charles Bolden – NASA Administrator
- Christopher Johnson – Secure World Foundation
- Jan Wörner – Chairman of DLR Executive Board
INDUSTRY: Entrepreneurship and its Role in the Space Industry
Entrepreneurship Group Discussion Focus Areas

- The Entrepreneurship working group investigated space entrepreneurship at three levels:
  - Microscopic: perspectives and challenges faced by the individual
  - Mesoscopic: impact of start-up accelerators that create awareness and unite like-minded individuals
  - Macroscopic: impact of culture on willingness to enter space, the role of government policy in enabling and business interactions
Recommendations/Conclusions

The working group recommends that UNCOPUOS:

- Support programmes developed to create successful entrepreneurial environments.
- Provide incentives to organisations that encourage support of new entrepreneurial activities.
- Support and facilitate removal of entry barriers into space entrepreneurship.
- Create a platform for international entrepreneurial collaboration.
- Help disadvantaged countries by leveraging local facilities.
AGENCY: Cubesat Swarms – Communication Networks and Policy Changes

Project Supported by
Agency Group Discussion Focus Areas

- Legal standards defining frequency bands
- Frequency allocation and registration for short projects
- Limitations of link budgets for small sat missions that restrict bus telemetry
- The effect of large satellite constellations on space debris

EDSN Cubesat Swarm. Credit: NASA
Recommendations/Conclusions

- Establish a communication network architecture
- Streamline the registration process
- Utilise space based communication relays
- Work with an organisation such as CCSDS to standardise network protocols
SOCIETY: On-Orbit Servicing: Commercial Opportunities with Security Implications

Project Supported by Secure World Foundation
Society Group Discussion Focus Areas

- Discussed legal and political implications of OOS industry development

- Group held mock hearings for OOS licensing with members assigned different stakeholders to represent.

- Their case was submitted to a domestic regulatory panel comprised of government ministers, which easily identified the challenges

Testing On-Orbit Servicing. Credit: Defence Industry Daily
Recommendations/Conclusions

- Short-term government agency responsibility for licensing OOS and ADR, mimicking the American FAA’s expanded responsibility to cover licensing of commercial space transport.

- Long-term responsibility of UN to regulate OOS and ADR.

- Government support of OOS & ADR to create continued demand:
  - Lead by example on government satellites
  - Potential launch levies to enable on-going ADR funding.

- Prevention of space weaponisation through transparency of OOS and ADR operations.

- Initiation of international cooperation on active debris removal.
EXPLORATION: Ethics and Policy of New Human Space Exploration Strategies

Anonymous Supporter
Exploration Group Discussion Focus Areas

- The expansion of current policies and establishment of new regulations to support new explorations strategies.
- Increasing number of players engaged in human space exploration.
- Tolerance for risk increases with proposed missions.
Recommendations/Conclusions

- UNCOPUOS could advocate the use of the Multilateral International Space Station Agreements as a model for cooperation. Additionally, risk sharing policies should be similar to US Launch Indemnification Policy and should better reflect challenges.

- UNESCO could extend world heritage status to valuable outer space sites.

- The International Court of Justice could be given jurisdiction over international space legal issues to establish liability.
EARTH OBSERVATION: Earth Observation for Maritime Services
Earth Observation Group Discussion Focus Areas

- Stakeholders
- Current capabilities and technologies and their potential
- Challenges in development and use for maritime applications
- Data access policies and their implications for stakeholders

Earth from GEO. Credit: NOAA
Recommendations/Conclusions

The working group recommends that UNCOPUOS:

• Enable a forum where policy makers can meet international organisations and other stakeholders to encourage information exchange.

• Support space agencies to compile user needs and strengthen the relationship between data users and data providers.

• Facilitate stakeholder interaction at the international level to share access to foreign Earth observation data and maritime technology.

• Encourage policy makers to develop regulatory structures with input from data users and data providers.
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- Lockheed Martin
- Secure World Foundation

Gold
- Space Communications & Navigations Group of NASA
- Anonymous Supporter
- SSPi
- United Launch Alliance
Supporters of SGAC 2014

- Anonymous
- Mr A. C. Charania
Partners of SGAC
Thank you

SGC 2014 Delegates in Toronto, Canada