



SPACE GENERATION
ADVISORY COUNCIL

IN SUPPORT OF THE UNITED NATIONS PROGRAMME
ON SPACE APPLICATIONS

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



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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





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SPACE GENERATION CONGRESS 2014

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 Swarms
- 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





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SGC 2014 WORKING GROUP RECOMMENDATIONS



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INDUSTRY: Entrepreneurship and its Role in the Space Industry

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.





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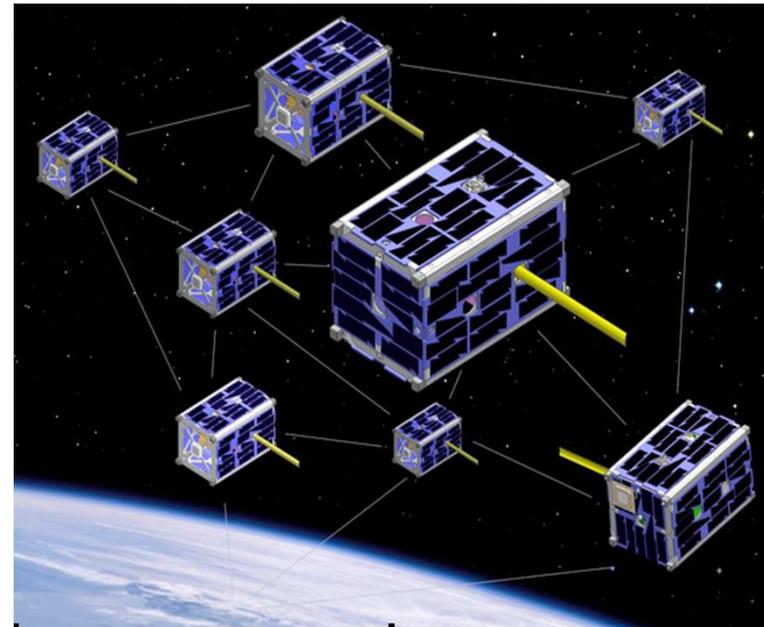
AGENCY: Cubesat Swarms – Communication Networks and Policy Changes

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





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SOCIETY: On-Orbit Servicing: Commercial Opportunities with Security Implications

Project Supported by



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.





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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

Colony on Mars. Credit: MarsOne



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.



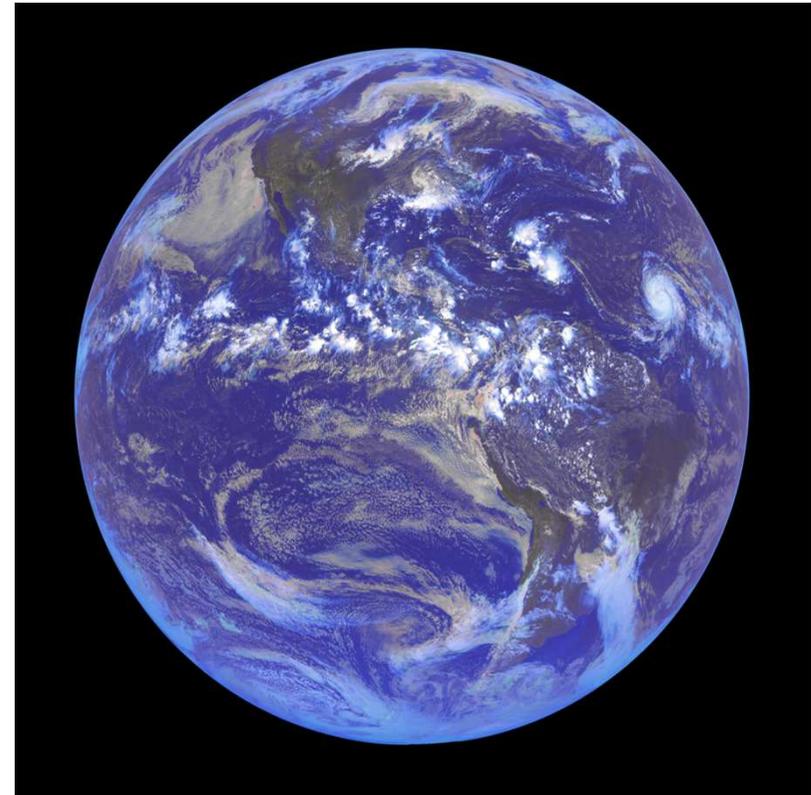


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EARTH OBSERVATION: Earth Observation for Maritime Services

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



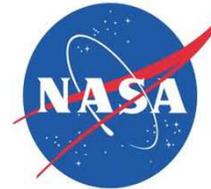
Recommendations/Conclusions

- 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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SPACE FOUNDATION

Space Communications & Navigations Group of NASA

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Gold



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Silver

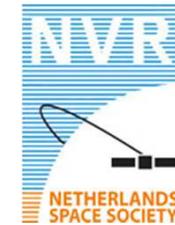


- Anonymous
- Mr A. C. Charania



Partners of SGAC

Partners



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Thank you



SGC 2014 Delegates in Toronto, Canada



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