SPACE GENERATION
ADVISORY COUNCIL

IN SUPPORT OF THE UNITED NATIONS PROGRAMME
ON SPACE APPLICATIONS

THE SPACE GENERATION CONGRESS 2011:

Perspectives from University Students and Young Professionals in the Space Sector

CONTENT

- What is SGAC?
- Space Generation Congress 2011
- 2011 Working Group Recommendations
  - Industry
  - Agency
  - Outreach
  - Exploration
  - Society

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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

- Started 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 90 countries

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SPACE GENERATION CONGRESS 2011

SPACE GENERATION CONGRESS

SGC Overview

- 29.09.11-1.10.11 in Cape Town, South Africa, in conjunction with the International Astronautical Congress (IAC)
- 130 delegates selected from 42 different countries and six continents to discuss top space policy issues
- 32 participants from 24 countries were given scholarships
- Students and young professional represented a wide spectrum of technical and non-technical space backgrounds
- Topics: Industry, Agency, Society, Exploration and Outreach

Selected SGC Speakers

Charles Bolden, Administrator of NASA

Dimitru Prunariu, Chairman of UNCOPUOS

Bernd Feuerbacher, President of the IAF

Selected SGC Speakers

Sandile Malinga, CEO of the South African National Space Agency

Peter Martinez, Head of Space Science and Technology Division at the South African Astronomical Observatory

Sergey Saveliev, Deputy Head of ROSCOSMOS

Ray Williamson, Executive Director of the Secure World Foundation

Check our youtube channel to see these speeches:http://www.youtube.com/spacegeneration

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SGC 2011 WORKING GROUP RECOMMENDATIONS

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INDUSTRY: The Political and Technological Challenges of Space Debris and Its Mitigation

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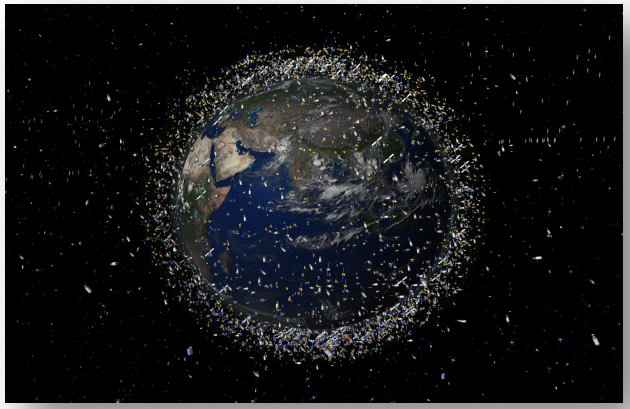
Industry Group Discussion Focus Areas



- Space situational awareness
- Better and internationally adopted debris mitigation guidelines
- Active debris removal

Recommendations/Conclusions

- Foster collaboration among established and emerging space nations
- Encourage investment in infrastructure to broaden coverage
- Establish a neutral center to:
  - compile voluntarily contributed SSA data into one public catalogue,
  - offer black box solution for compiling sensitive/proprietary SSA data.
- Encourage adoption and compliance of the UN Space Debris mitigation Guidelines and the more detailed Inter Agency Space Debris Coordination Committee (IADC) guidelines
- Increase awareness of debris and mitigation issues
- Develop a process for determining which orbital objects to remove and how
- Endeavour to create long-term, stable demand for commercially provided Active Debris Removal (ADR) services
- Focus on mitigating irresponsible behaviours rather than prohibiting the technology development

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AGENCY: Radio Frequency and Satellites: The Technological, Logistical and Political Implications of Regulation

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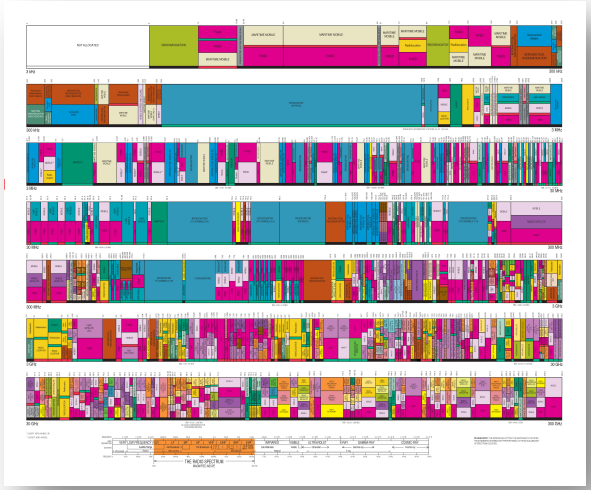
SPACE COMMUNICATIONS SCaN AND NAVIGATION

NASA

NASA Space Communications and Navigation Group of NASA

Industry Group Discussion Focus Areas



- Interference of essential services, at competing socio-economic needs and at public versus commercial uses of spectrum bands
- The assessment of emerging capabilities based on experience
- The standardisation of emergency services
- Applications for safety of life
- Methods to decrease unintentional upward radiation

Recommendations/Conclusions

- Consider long-term implications over short-term tactics
- Assess emerging capabilities based on experience
- Standardise and prioritise emergency services
- Use methods that decrease unintentional upward radiation
- Coordinate strategically spectrum allocation:
  - protection of non-commercial services (e.g., education and medical)
  - grouping of high-noise applications together
  - creation of a formula for how to prioritise conflicting uses of a band

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SOCIETY: Integrating Space Technology into Society: Overcoming Societal, Political, Economic, and Logistical Roadblocks

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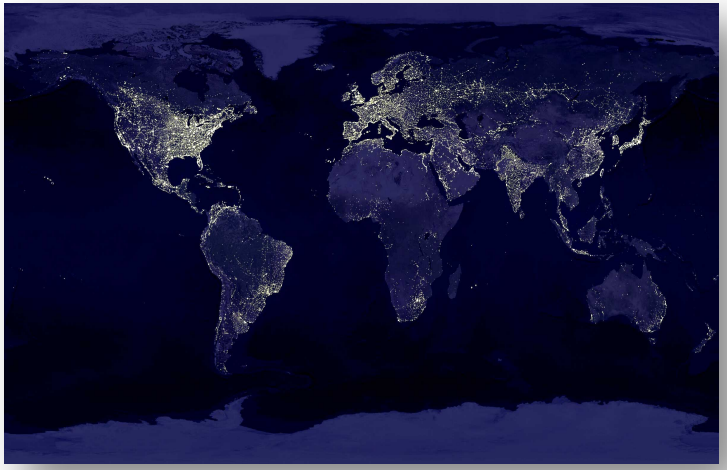
Secure World Foundation

Industry Group Discussion Focus Areas



- The UN Millennium Development goals and space technology
- The lack of awareness preventing space technologies from penetrating society

Recommendations/Conclusions

- Integrate space activities and policies with other mission-oriented bodies and entities (e.g., World Health Organisation, World Bank & the United Nations)
- Develop outreach strategies appealing to a layperson
- Reframe the dialogue about space: focus on benefits, not features
- Create coordinated standard training curricula, best practices dialogue, and technology development agenda which are:
  - responsive to new technologies and opportunities
  - separate for managers and on-ground personnel

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EXPLORATION: Robotic Exploration in Today's Evolving Global Space Sector

Project Supported by

German Aerospace Center

Industry Group Discussion Focus Areas

- Exploration of two destinations: Near Earth Objects and Europa
- How robotic and human exploration can work together with the support of international collaboration
- What outreach initiatives could make robotic exploration as exciting as human missions

Recommendations/Conclusions

- Robots are uniquely suited for two main types of missions:
  - precursor missions to human exploration (e.g., NEOs),
  - destinations otherwise inaccessible to humans (e.g., Europa).
- Robots may lack human dexterity, autonomy, and inspirational traits but are strong in other areas:
  - enabling riskier and longer missions,
  - saving mass requirements and cost,
  - allowing scalable technical contributions, therefore easier collaboration.
- Robotic and human exploration should be analysed as complimentary not competitive approaches to exploration
- International collaboration is encouraged through modularised missions
- Robotic exploration should be incorporated into space outreach activities

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OUTREACH: Space for Developing Regions

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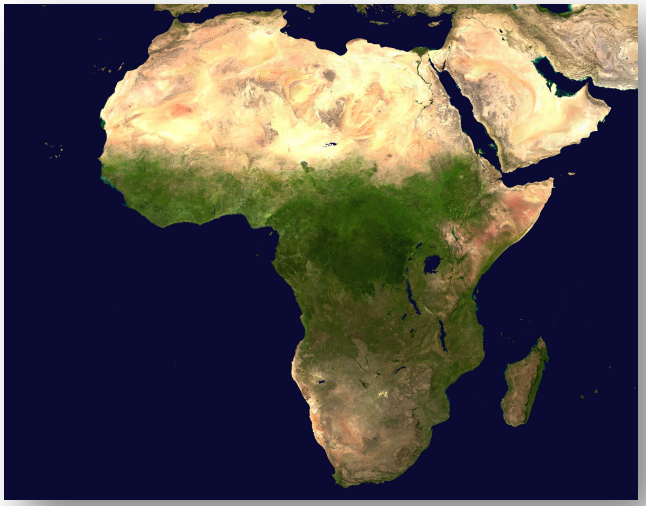
NRF National Research Foundation | SAASTA South African Agency for Science and Technology Advancement

South African Agency for Science and Technology Advancement

Industry Group Discussion Focus Areas



- The role of space in supporting the development of Africa and other emerging regions
- Space outreach from a top-down policy approach and bottom-up grassroots approach

Recommendations/Conclusions

For policy makers:

- Establish a liaison between each country's department of education and space-related organisation
- Create a UN resolution requiring countries to focus on space related educational activities (e.g., International Year of Space Science 2015)
- Encourage researchers to make space understandable to the layperson
- Prioritise policies that encourage human capital development
- Work towards the development of national space agencies

For young professionals:

- Teach, engage by workshops, games and competitions
- Form clubs/societies and organise events
- Create entrepreneurial start-ups for grassroots/field teaching, technology development and space advocacy think tanks
- Get involved in policy making
- Create financial start-ups for scholarships to study space related subjects
- Encourage employers to initiate scholarships and internships

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Platinum

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SECURE WORLD FOUNDATION

NRF National Research Foundation | SAASTA South African Agency for Science and Technology Advancement

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Space Communciations & Navigations Group of NASA

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Gold

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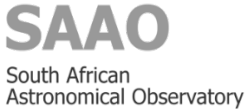

- Bob Becker
- Donna Becker
- A.C. Charania
- Peter Diamandis
- Jun Okushi
- Paul Reilly

Partners

Thank you

SGC 2011 Delegates in Cape Town