

SPACE POLICY PERSPECTIVES OF THE SPACE GENERATION

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ABSTRACT

Space Policy was a topic of discussion at the Space Generation Forum (SGF), UNISPACE III (1999) and its recommendations were further developed at the Space Generation Summit (SGS), an event held at World Space Congress (WSC) in 2002. This paper builds upon those findings and addresses key other emergent space policy issues.

The material in this paper, reports the work to date on consolidating the views of young space professionals regarding Space Policy issues, and strategic plans to help solving key questions currently facing the international space workforce. We also discuss the most relevant issues of SGAC's recent input to the United Nations Committee on the Peaceful Uses of Space (UN COPUOS) towards the implementation of the recommendations of UNISPACE III.

1. HISTORICAL BACKGROUND

Today, a new generation of inspired and driven people, that mutually share the passion and awe of exploring space, who wants to share the knowledge and experiences with all the people of the world, is gradually gathering together on a global scale independent of national borders, cultures and languages. The generations born and raised after Yuri Gagarin and the Apollo missions are now known as the '**Space Generation**'.

The Space Generation originally met at the **Space Generation Forum** (SGF), held during the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III), Vienna, Austria, in July 1999. The 200+ delegates and organisers of the Space Generation Forum were from 60 nations.

Their expertise covered all fields of space, including science, technology, law, ethics, art, literature, anthropology and architecture, and many other fields relevant to space.

These participants were encouraged from the beginning to think in terms of a broader perspective, encompassing all humanity, and to disregard national agendas. All participants spoke only as concerned individuals, guided by their conscience and a belief in the power of space to change humanity in positive ways.

The Space Generation Forum became an unprecedented opportunity for young space students and professionals from around the world to bring their vision and perspective on what should be the focus of space activities in the next century to the current leaders and decision makers in the space arena, as well as contribute to shaping humankind's future in outer space.

More than 40 fresh ideas, alternative scenarios and new insights from the viewpoint of highly skilled young people were generated and compiled into a report in an "extraordinary marathon against time".

¹ This paper is written in the Author's personal capacity and does not necessarily represent the views of the Space Generation Advisory Council (SGAC).

The discussions of the Space Generation Forum resulted in 49 recommendations² and the participants were then asked to choose their 10 best recommendations. Consensus was achieved concerning the selection of the 10 recommendations, and these were submitted³ to the Secretariat of UNISPACE III. On approval at UNISPACE III final Plenary Session, these SGF recommendations were then included in the **UNISPACE III Report⁴** and detailed in **SGF Technical Report⁵ to UNISPACE III**.

Last but not least, the **Vienna Declaration⁶** (prime summary of the whole UNISPACE III conference) consists of 10 recommendations of which half were directly incorporated from the work of SGF. This fact alone, if necessary, entitles the Space Generation to claim that SGF was indeed a remarkable youth success by any world standards!

The 10 SGF recommendations are the following (the ones in bold were included in the Vienna Declaration):

- 1: **Global Space Education Curriculum**
- 2: **Nobel Space Prize**
- 3: **Priority Access to Mobile Satcom Network for Disaster Emergency Management**
- 4: Action Plan for Meeting the World's Basic Needs through Technology
- 5: International Space Authority
- 6: International Space Chamber of Commerce
- 7: **Planetary Defence/Protection**
- 8: Establishment of an International Centre for Space Medicine
- 9: **UN Space Advisory Council**
- 10: SGF Follow-up

One of the main outcomes of SGF was the approval of its recommendation to "*create, within the framework of the Committee on the Peaceful Uses of Outer Space (COPUOS), a consultative mechanism to facilitate the continued participation of young people from all over the world, especially young people from developing countries and young women, in co-operative space-related activities*". (SGF Rec.9, incorporated into the Vienna Declaration as Rec. 22, and currently also known as UNI-3 Implementation Action Team 22).

In order to create this consultative mechanism, the Youth Advisory Council (YAC) - the precursor of SGAC - was established in 2000 to serve as an *interim voluntary body* and to support its Advisors (ex-SGF Delegates) in assisting UN COPUOS and the Office for Outer Space Affairs (OOSA). At the end of this *interim period*, the **Space Generation Advisory Council in support of the United Nations Programme on Space Applications⁷** (SGAC) was formally created in June 2001, and registered in Vienna, Austria. Furthermore, SGAC was officially granted Permanent Observer Status to COPUOS at the UN General Assembly (fifty-sixth Session, NY)⁸, in December 2001.

2. SPACE POLICY PERSPECTIVES OF THE SPACE GENERATION

Since its creation, the Space Generation Advisory Council has been consolidating the views of young space professionals regarding Space Policy issues, and strategic plans to help solving key questions currently facing the international space workforce. The key contributory element to its master performance, and portfolio of impressive results, has been the series of very successful events that SGAC has organised (or contributed to) which have always provided excellent international brainstorming sessions, and subsequent brilliant think-thanks and networks of contacts, on space policy issues. This section reports, in a chronological order, key contributions of the Space Generation to the Space Policy international debate.

2.1. GRAZ III (2002)

UN/Austria/ESA Symposium on "Enhancing the Participation of Youth in Space Activities"⁹

This Symposium was the third and final meeting in a series of three dealing with the participation of young people in space activities. It was built upon the outcome of the first two symposia and served as a forum for the Space Generation Advisory Council (SGAC) to identify and strengthen avenues and mechanisms for pursuing its objectives in the future.

The main objective of the Symposium was to bring together young space experts from around the world as

² UNISPACE III docs: A/CONF.184/L.8, annex

³ UNISPACE III docs: A/CONF.184/C.1/L.11

⁴ UNISPACE III docs: A/CONF.184/6, Part 3, pgs 104-107 (<http://www.oosa.unvienna.org/unisp-3/index.html>)

⁵ UNISPACE III docs: A/CONF.184/L.14

⁶ <http://www.oosa.unvienna.org/unisp-3/index.html>

⁷ <http://www.unsgac.org>

⁸ UN General Assembly Official Records (2001):

http://www.oosa.unvienna.org/Reports/gadocs/pdf/A_56_20E.pdf (pg. 26, Section G, para. 211-219)

⁹ Full Report may be found here:

http://www.oosa.unvienna.org/Reports/AC105_793E.pdf

well as experts from major space education and outreach groups in order to discuss and define mechanisms to increase space education in various countries and to identify actions to involve young people in space-related activities. Their space policy perspectives also served as direct input to UNI-3 ATs¹⁰.

Recommended Actions:

An Enduring Human Presence on Earth and in Space

- Developing a comprehensive, world-wide environmental monitoring strategy involves acquiring information on many parameters, some of which still need to be identified. Initial steps include finding ways to increase the use of remote sensing data in environmental monitoring and collecting addresses of web sites that provide useful information on one web page. The addresses could be included as part of the international space index proposed by SGAC in 2001.
- The main action that SGAC should take to minimise the harmful effects of space activities on the local and global environment is to increase awareness in order to promote the educated use of existing and future space transportation systems. Specifically, SGAC members should recommend the use of environmentally friendly fuels to designers of space launch systems; promote awareness of the danger that the use of weapons in space would represent; promote a greater understanding that the manufacture of space hardware (fuels, rocket systems etc.) can be harmful to the environment; and request States to discuss failures in public in order to promote mitigation measures.
- A space-based disaster mitigation system could be implemented using existing technology such as Earth observation data, satellite communications and global navigation satellite systems (GNSS) and ancillary technologies such as geographic information systems (GIS). Spin-offs that could support other development issues such as environmental protection and urban planning can result from the creation of such a system. In order to implement such a system, it is necessary to create an international organisation supported by the United Nations for disaster management and to create local organisations within countries. A number of legal and economic issues need to be studied.

¹⁰ SGAC Progress Report to UNI-3 ATs (Jan 03) may be found here: http://www.oosa.unvienna.org/Reports/limited/pdf/AC105_C1_2003_CRPO8E.pdf (pgs: 7-26)

Brief update to this Report (Jun 03) may be found here: <http://www.unsgac.org/downloads/documents/AnnualReport/2002-2003Report.pdf> (pgs 5-6)

- Possible actions that could be taken to improve the scientific knowledge of near and outer space include supporting existing co-operation projects as a basis for strengthened future co-operation; establishing a common infrastructure for sharing technical and non-technical information among agencies; and enhancing the opportunities for participation in missions on a global basis.
- The strategies that could be followed to improve the international co-ordination of activities related to near-Earth objects (NEOs) include the creation of a programme sponsored by the United Nations to co-ordinate NEO observations around the world, including a co-ordinating mechanism for data sharing. The programme could use existing optical and radio-astronomical systems linked by the Internet, co-ordinate with military systems to search for NEOs using detection systems already in place and plan a future space-based telescope network dedicated exclusively to NEOs.
- Nuclear power for systems operation or propulsion is needed for deep space missions where solar power is not available (or is available only at very low levels). Owing to the long-term character of nuclear power applications in space missions, young people should take a proactive role in defining international standards dealing with the launch and operation of nuclear-powered devices. It is proposed that SGAC establish a working group to discuss issues related to nuclear power sources and provide support to implementing recommendation 15 of UNISPACE III.
- Young people can increase awareness among decision makers and the general public of the importance of space by creating education programmes and materials that could be used in statistical reports on the applications of space technology and public communiqués that highlight the benefits that space technology can provide.

Another action would be to quantify the benefits obtained from space, that is, to carry out a global space cost-benefit analysis.

Universal Space Education

- The participants in the working group dealing with universal space education indicated that space-related education was needed for all age levels, across all sectors of society, and that for that purpose it was necessary to develop a universal space education plan. Such a plan would contain central or core elements but would be adapted to the conditions of the country where it was to be implemented. The observations and recommendations of the working group are presented below.

- Space-related activities and materials need to be developed for children. Materials should be eye-catching, colourful and without much text, use simple language, be interactive and incorporate fundamental concepts of basic science and technology. Materials should be developed for use in non-conventional disciplines such as arts and social studies. Specific attention should be paid to encouraging girls to study science and technical disciplines.
- Written materials that focus on youth in rural communities need to be prepared in local languages taking into account specific local needs. Adults from local communities should participate in preparing such information.
- There is a need for more teacher training programmes aimed at motivating teachers to learn about space sciences and technology and providing them with supporting materials and examples of practical applications of space science and technology in the daily life of pupils.
- Governments should take an active role in promoting a better understanding of the importance of having a good national space science and technology education programme and in making possible and encouraging the participation of students in local, regional or international conferences and workshops to exchange information and experiences with other students.
- Literacy and rural education can be facilitated through tele-education. Some of the incentives that would appeal to user communities are the long-term benefits of education, equal education opportunities for girls and boys and the fact that the education programmes can be promoted within villages by local respected individuals. Programmes could be promoted by offering simple awards and scholarships and by schemes to pay graduates of programmes to teach younger people.
- Direct benefits of rural education that could help to convince Governments to use tele-education technology are improving farming through access to weather forecasts and information on better farming methods; addressing illnesses through tele-medicine and health education; and improving communication within the country.
- The use of redundant satellites or bands of telecommunications companies at discount rates and the use of electronic equipment that is being replaced in some countries could reduce the cost of infrastructure needed for tele-education.
- A universal space education programme would have dual benefits. The information on national space activities that would be gathered to develop the programme would also be a useful mechanism to co-ordinate space activities, and, because the

programme would be based on a universal range of experience, it would be broad enough to be adapted to national circumstances. It is recommended that people and organisations in each country be involved in gathering such information, which can be used to celebrate events and educate people about space activities.

- One way to increase public awareness and promote space activities is by recognising outstanding contributions in the space sector. Such recognition could be through offering prizes for outstanding achievements. Options for space prizes that were identified included a Nobel space prize or a space prize created and promoted by SGAC and possibly sponsored by the United Nations. The latter could be linked to existing prizes.

Meeting basic needs ethically

- The working group proposed the creation of a network of health services, linked by satellites, that would include leading medical research centres. Such a network would serve to indicate available medical resources, distribute information on health issues and monitor the spread of diseases.
- Universal access to space communication services could be promoted through co-ordinated efforts by international organisations such as the United Nations Development Programme, the United Nations Educational, Scientific and Cultural Organisation, the World Health Organisation, the World Bank, and space agencies and local organisations that provide space communications and services. For that purpose, it would be necessary to create an international programme to pool the unused resources of existing satellite platforms and ground stations in order to provide developing countries with access to the Internet at low cost.
- SGAC could create a forum for an open discussion and identification of space research applications/products that could be used for achieving sustainable development. The results of those discussions could be shared with Committee on the Peaceful Uses of Outer Space and decision-makers to promote global awareness of the technologies that are available.
- Booklets containing ethical guidelines on the use of space technology should be prepared for the public and decision-makers. An international space ethics committee should be established to address issues such as meeting basic needs of a country while giving due consideration to neighbouring countries (e.g. in water or energy management). Space should be seen as a peaceful global endeavour unifying humankind.

- Space faring countries should improve the sharing of information on spin-offs from space activities with developing countries. A dedicated web site should be created that could serve as the focal point for the dissemination of information provided by Governments and relevant agencies.

Co-operation among nations

- The management of Earth's natural resources can be improved by educating youth about the importance of space technology for monitoring and preserving natural resources as well as for research on renewable energy resources.
- The education of the news media should be emphasised as a way to bridge the gap between society and the space community. A mechanism that is intergenerational, interdisciplinary, intercultural and international in nature could serve to provide feedback to the space community from industry, the public, decision makers and the academic community.
- Well-educated people are indispensable assets for space growth and development. Human resources can be developed by organising training courses and seminars and by setting up space infrastructure facilities. Capacity can also be built by establishing scholarships and fellowships for space enthusiasts. Budgetary resources needed to build capacity could be made available through grants by space agencies and donations by governmental and non-governmental entities. Some budgetary resources could also be included in proposals or requests for funding of space projects and, above all, by setting government and industry policies that foster education in space-related fields.

2.2. World Space Congress (2002)

2.2.1. Space Policy Summit¹¹ (Position Papers)

The SGAC, through the Space Generation Summit, was invited to contribute with a Position Paper¹² representing young space professionals' views to each of the four tracks of the Space Policy Summit. These were developed by gathering ideas and recommendations from precursor conferences to SGS and through an international consultation process of young space professionals. Recommendations were generated

¹¹ The results of the Space Policy Summit can also be found at: <http://www.aiaa.org/spacepolicy/report.html>

¹² SGAC Position Papers to the Space Policy Summit: <http://www.unsgac.org/sgs/papers/Breakdown/SPS.pdf>

according to the principle that space exploration should be carried out for the benefit of humankind.

Cross Cutting Recommendations:

- Perform a Global Cost-Benefit Analysis of Space to justify space activities.
- Initiate a feasibility study into an International Body for the Long-Range Future.
- Establish an International Space Authority to co-ordinate exploration of space.
- Increase youth space education through a Global Space Curriculum.

SGAC Position Paper to SPS Track I – Pioneers

Key recommendations:

- Develop new launch systems through the creation of an International Centre for Advanced Propulsion and Launchers;
- Inspire excellence in research by establishing a global Space Prize.

SGAC Position Paper to SPS Track II – Prospectors

Key recommendation:

- Establish an International Space Chamber of Commerce.

SGAC Position Paper to SPS Track III – Peacekeepers

Key recommendations:

- Maintain space as a peaceful domain through a Treaty Banning Space Weapons;
- Use Space in Countering Asymmetric Threats;
- Undertake to Research into the Threat of Near Earth Objects;
- Undertake to Strengthen International Law in Space.

SGAC Position Paper to SPS Track IV - Protectors

Key recommendations:

- Implement the Recommendations of UNISPACE-III;
- Pursue a Permanent Settlement Beyond Earth within 15 years.
- Undertake Research into the Threat of Near Earth Objects
- Establish a norm that space agencies commit 1% of their funding to education

2.2.2. Space Generation Summit¹³ (SGS) and SGS Space Policy Working Group

The Space Generation Summit (SGS) was a three-day meeting that gathered over 200 (18-35) international students and young professionals to develop a youth vision and strategy for the peaceful uses of space.

¹³ Full SGS Report may be found: <http://www.unsgac.org/sgs/papers>

This conference, endorsed by OOSA/UN COPUOS, was held in conjunction with the World Space Congress (WSC) – the largest gathering of space entrepreneurs, scientists and policy-makers within the last decade – and took place in Houston/USA, October 11-13th, 2002. Delegates discussed ongoing youth space activities, particularly those stemming from the UNISPACE-III, SGF and also taken forward by the Space Generation Advisory Council (SGAC). Delegates addressed a variety of topics with the goal of devising new recommendations according to the theme, 'Accelerating Our Pace in Space'.

Vision:

To create a truly global community working towards a permanent international self-sustained human presence beyond Earth that simultaneously explores our origins and responsibly drives our future. We seek to ethically utilise the resources of space to minimise the risks posed to civilisation, provide a stabilising force for global security, and maximise the quality of life for all people by providing essential human rights.

Aims and Output:

The aim of the Space Generation Summit was to reinforce the vision of youth established at SGF, generate ideas to be implemented by senior space professionals and develop implementation plans for our own SGAC projects. SGS took advantage of the unique opportunities that WSC offered to present the global youth perspective on space issues to world leaders. The output of SGS and the projects of SGAC were presented at:

- The Space Policy Summit (4 position papers)
- WSC technical sessions (13 IAF papers)
- Within the SGS Final Report¹² (online)
- Within an invited WSC Plenary Statement from youth
- Through an Exhibition of SGAC and associated projects at an SGAC booth in the main exhibit hall of the WSC.

Fora and Working Groups:

Delegates were charged with the task of developing recommendations and implementation strategies according to the theme of 'Accelerating Our Pace in Space'. Delegates were divided into 4 forums, which were in turn sub-divided into working groups in order to facilitate discussion.

SGS FORUM I: SPACE EXPLORATION

Space Policy Perspectives of Young Space Professionals; Human Exploration of the Moon – a Youth Perspective; SETI and Astrobiology: Contact – a Youth Perspective; Establishing a Permanent International Human Presence in Space – a Youth Perspective; Human Mars Exploration and Development – a Youth Perspective;

International Centre for Advanced Propulsion and Launchers.

SGS FORUM II: INTERNATIONAL COOPERATION

Youth Policy on Global Co-operation; Political Mechanisms for Space Development: Long-Term Committee on Survival; Innovative Ideas for Co-ordinating International Space Activities; Youth Initiatives and Projects on Human Rights and Ethics in Space Activities; Increasing Public Participation in Space Programmes.

SGS FORUM III: COMMERCE AND SPACE

Bridging the Worlds of Entertainment and Space to Increase Space Awareness; Space Tourism – A Youth Perspective; Global Space Prize – A Youth Initiative.

SGS FORUM IV: SPACE TO ENHANCE LIFE ON EARTH

Youth Policy on Space for Security; Planetary Protection – A Youth Initiative; Mobile Satellite Communications for Emergency Relief; Education and Sustainable Development.

SGS Space Policy Working Group Overview¹⁴:

Space Exploration

- Develop an international long-term plan for space exploration and science;
- Create a cohesive plan to avoid duplicate efforts;
- Use existing space agencies and organizations, or establishing an international space authority, to develop the plan;
- Incorporate national plans and resources;
- Set key milestones to achieve, in a stepwise manner, to reach larger goals.

Commerce and Space

- Establish an International Space Authority:
 - Coordinate activities and enable countries to work together;
 - Avoid duplication of efforts within such areas as space exploration, education and outreach, and standards and regulations.
- Establish an International Space Chamber of Commerce:
 - Maximize the economic value of space activities by facilitating long-term investments to accelerate development within the space sector.

¹⁴ SGS Space Policy WG Report:
<http://www.unsgac.org/sgs/papers/Breakdown/Exploration/Policy.pdf>

- Establish a Global Space Prize
Inspire excellence in research and breakthroughs in the space sector.
- Encourage research of low cost launching systems
Define the 20 key obstacles of low cost space access;
Create prizes to be awarded for overcoming any of the listed obstacles.

Space Based Security

- Establish a Global Treaty to prohibit hostile interference or destruction of satellite systems by anti-satellite weapons;
- Include space based peacekeeping in the mandate of the UN Security Council;
- Use space assets to intensify monitoring of treaty compliance and verification provision;
- Undertake Research into the Threat of Near Earth Objects.

Space to Enhance Life on Earth

- Develop a process to identify and protect space assets/satellites that are beneficial to humankind;
- Integrate space technology to promote an effective interdisciplinary response to problems threatening the quality of life:
Agriculture and resource management;
Support of tele-medicine;
Advance research for cures of diseases.
- Use of space technology to allow for the widespread dissemination of information, particularly as required for relief in natural disasters

Highlighted Policy Issues:

Public Education

- Establish a Space Education Foundation with space agencies committing 1% of their funding
Educate youth and the general public via creation of a global space curriculum;
Space Camp for Politicians to demonstrate importance of space activities;
Advance the utilization of available space technology to support distance education in primary and secondary schools.

- Define methods to expose children from around the world to real space experiences such as rocket launches
Leverage SGAC's connections to the UN to identify funding;
Target students from developing countries;
Develop competitions to combine learning and selection process;
- Assist community service outreach organizations to include space education and outreach in their work, e.g., Raleigh International and Peace Corps;
- Establish a Junior SGAC that will help to establish cross-cultural friendships.

Continued Co-operation

- Foster a cooperative environment
Avoid nationally competitive efforts;
Reduce waste from duplicate endeavors;
Facilitate the efficient use of resources.
- Broaden horizons of space activities
Increase public awareness through nationalism;
Expansion of channels for space education;
Open doors for new ideas and technology.
- Invite additional space faring nations to participate in ISS:
Invite other countries as they become willing and able;
Identify roles for additional countries.

2.3. National consultations with ESA/EU and contributions to the EU Green Paper: European Space Policy (2003)

Young space professionals have been actively involved with European Space Policy and are attempting to set up a formal mechanism for representing the input of young people to EU/ESA. During 2003, the EU/ESA Space Policy team has submitted its input to the EU Green Paper on "European Space Policy". This team, and other SGAC European branches, have been meeting with prominent figures, including members of the European Commission and the Director General of ESA. A conference on European Space Policy is now scheduled to take place in Lisbon/Portugal.

2.3.1. EU/ESA Space Policy *Developing and Delivering Youth Vision on EU Space Policy*

Key Recommendations¹⁵

The EU should:

- Substantially increase the scope of common EU space programmes, especially in light of the growing difference in scope from US programmes, by (a) increasing overall investment, (b) integrating national space / defence programmes, and (c) the continued efficient use of resources.
- Develop consolidate and expand capabilities in space security.
- Work to strengthen and enforce international space law, and in particular develop with its international partners an effective treaty prohibiting space weapons.
- Rescale programmes to develop a cheap launch capability for Europe by concentrating efforts on non-conventional technologies.
- Expand cutting edge programmes such as human spaceflight, outer solar system exploration, and advanced launchers – thereby inspiring students and reducing the drain of students away from the science and technology areas vital for a strong European future.
- Increase the public visibility of European space activities by establishing a norm that 1% of all space budgets be spent on education and outreach activities.
- Establish a centre for strategic interdisciplinary research – ‘black sky thinking’ – for long-term and innovative research into the space sector, to retain complete employment opportunities for education systems of highly capable, innovative and motivated people.
- Establish a “Youth Advisory Council” in support of the European Union Space Policy to represent the vision and ideas of young people from all over Europe on space, (analogous to the role of SGAC towards the UN).

2.3.2. International Space Policy *Developing Youth Vision on International Space Policy*

This team has been invited to co-sponsor the follow up conference to the Space Policy Summit to be held in Strasbourg/France in May 2004. The Space Policy Summit gathered heads of space agencies and companies world-wide to discuss future space policy and which occurred in during the WSC. This team plans to develop further input for this meeting to build upon SGAC input to the SPS¹⁶.

¹⁵ Full Report submitted to the EU Green Paper:
<http://www.unsgac.org/downloads/documents/EU/EUSpacePolicy21.6.03.pdf>

¹⁶ SGAC Position Papers to the Space Policy Summit:
<http://www.unsgac.org/sgs/papers/Breakdown/SPS.pdf>

FINAL CONSIDERATIONS

As a follow-up to the SGAC work on space policy issues, the tentative conference on "European Space Policy after the EU Green Paper" (to be held in Lisbon/Portugal) will incorporate, and voice, the continued views of young space professionals.

ACKNOWLEDGEMENTS

This paper was only possible, and justified, thanks to the ideas and continuous global network of individuals at SGAC. I hereby would like to acknowledge their contributions that took place at the following SGAC's space policy related events:

GRAZ III

UN/Austria/ESA Symposium on "Enhancing the Participation of Youth in Space Activities"

WG Implementation Action Teams co-Chairs:

M. Dejmeck (Canada), P. Figueiredo (USA), S. Kemper (USA) and I. Pessoa-Lopes (Portugal).

Delegates:

J. Aban (Japan), N. Abd-El Hamed (Egypt), M. Adjrard (Algeria), O. Arenales Vergara (Japan), F. Asante (Ghana), M. Attaba (Algeria), E. Babayef (Azerbaijan Rep.), N. Babcsan (Hungary), D. Balbuena Contreira (Brazil), D. Bizimana (Burundi), T. Brum Preto (Brazil), F. Bwalya (Zambia), H. Camus Palacios (Chile), J. Canales Romero (Germany), D. Castagna Lunardi (Brazil), A. Chavarri Rodriguez (Mexico), E. Cristea (Austria), F. da Silveira Rodrigues (Brazil), P. De Leon (Argentina), M. Del Mundo (Philippines), A. Dia (Senegal), C. Dlamini (Swaziland), M. d'Ornellas (Brazil), G. Drayer (Venezuela), M. Ekiru (Kenya), S. El Kafrawy (Egypt), A. Elkhazmi (Libya), L. Escudero (Spain), W. Fan (China), M. Fatayer (Jordan), L. Fernando (Sri Lanka), F. Figueiredo (Brazil), L. Franco Padhila (Brazil), M. Franzon (Sweden), W. Gali (Tanzania), P. Gamboa Enciso (Peru), E. Garcia Romero (Peru), J. Garcia Villalobos (Peru), G. Gbodo (Benin), S. Gill (Australia), B. Gimenes (Brazil), R. Guarnieri (Brazil), A. Guidi (USA), L. Hidalgo (USA), L. Horst (Brazil), S. Ibrahim (Syria), S. Ibrahimova (Azerbaijan Rep.), N. Kasoma (Zambia), N. Kho (USA), G. Korankye (Ghana), A. Koru (Turkey), A. Kotarski (Poland), A. Kovacevic (Serbia), H. Lekamisy (Madagascar), R. Leon (USA), L. Lone (Brazil), T. Lone (Brazil), L. Lopes (Brazil), I. Majid (Pakistan), N. Medagangoda (Sri Lanka), D. Meister (USA), M. Menchaca-Brandan (Mexico), J. Mimouni (Algeria), H. Mirahmetoglu (Turkey), M. Moalusi (South Africa)

Rep.), J. Morales (USA), S. Mugisha (Rwanda), V. Nunes (Portugal), B. Nyarko (Ghana), A. Nikolova (Bulgaria), F. Nzeyimana (Burundi), C. Nzioki Mbatha (Kenya), S. Oliveira Monteiro (Brazil), Z. Omarava (Kazakhstan), G. Omarava (Kazakhstan), Giuseppe Ottavianelli (Italy), B. Pecnik (Croatia), E. Pires (Brazil), N. Rawat (USA), M. Rockenbach Da Silva (Brazil), J. Rubira Chauca (Peru), R. Rustamos (Azerbaijan Rep.), J. Salazar Osorio (Peru), N. Savavessa Cardoso (Portugal), R. Schingler (USA), M. Sharav (Mongolia), T. Sinning (Germany), M. Sira Moran (Venezuela), Douglas Smith (UK), H. Spitzl (Austria), L. Szentpeteri (Hungary), Y. Takaya (Japan), A. Tan (Turkey), P. Tarikhi (Iran), F. Tawil (Syria), L. Ticona Salazar (Peru), J. Tizard (UK), I. Tunku (Malaysia), P. Vila Millones (Peru), Rui Vilhena (Portugal), L. Vo (Vietnam), A. Volp (Netherlands), L. Von Muhlen (Brazil), P. Wang (China), N. White (UK), G. Whitesides (USA), E. Xavier (Tanzania), F. Zougmore (Burkina Faso), M. Zoungrana (Burkina Faso).

WSC 2002

Space Policy Summit (SGAC Position Papers)

Conveener: *Iole De-Angelis (France)*

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Prospectors (Track II): *Robert Schingler (USA)*

and *Isabel Pessoa-Lopes (Portugal)*;

Peacekeepers (Track III): *Iole De-Angelis (France)*

Protectors (Track IV): *William Marshall (UK) and Isabel Pessoa-Lopes (Portugal)*

Space Generation Summit (SGS)

Space Policy Working Group

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Last but not least, a very personal word of thanks to Iole De-Angelis (France), William Marshall (UK) and Andrew Hoppin (USA) for all the memories of inspirational wisdom whilst editing this SGAC paper.