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THIRD UNITED NATIONS CONFERENCE ON THE EXPLORATION AND PEACEFUL USES OF OUTER SPACE

Vienna
20-30 July 1999

Note by the Secretariat

1. The Space Generation Forum, held within the framework of the Technical Forum of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III), brought together more than 150 young space professionals from around the world, allowing them to exchange their visions and perspectives for space activities in the twenty-first century and to formulate forward-looking recommendations for consideration by the Conference.
2. The participants conducted their deliberations in the form of theme-oriented discussion sessions, taking into account input from on-line discussions (www.space-generation.org) and regional conferences held around the world in the months preceding the Conference.
3. The results of the discussions held during the Conference from 20 to 23 July 1999, at the United Nations Office at Vienna, are summarized in the paper annexed to the present note for the information of Member States.¹
4. Ten out of the 49 proposals contained in the annex have been selected for further consideration and will be submitted to the appropriate Committees of the Conference through the Chairman of the Technical Forum for consideration under the relevant agenda items.
5. The participants at the Space Generation Forum expressed their hope that the annex would be found useful by the participants at the Conference and would contribute to inspire space activities in the twenty-first century.

¹ The annex is available in the language of submission only.



Proposals of the Space Generation Forum



Preface

The Space Generation Forum, organized as part of the UNISPACE III Conference, allowed more than 150 young international delegates to exchange ideas and express their vision of space for the future – with emphasis on benefit to humankind. These young professionals have convened from around the world because of their efforts in the international space community in the areas of science, policy, medicine, and in the humanities.

In the course of parallel sessions during the first week of UNISPACE III, and including previous inputs from sister SGF conferences and SGF electronic forum over the last months, the delegates had brainstorming sessions, made presentations and self-evaluated their proposals. They have summarized part of their work in progress, formulated as proposals and pre-selected by vote. This working document will be used to formulate the SGF contribution and proposed recommendations to the UNISPACE III report. We hope that it will be useful for UNISPACE III Delegations and for inspiring space activities towards the 21st century.

Proposals of the Space Generation Forum

1. Education without Frontiers: A Global Education Curriculum **
2. Creation of a global space library
3. Priority access to mobile satcom network for disaster emergency relief **
4. Coordinated International Marketing Strategy for Space
5. Combined with 4.
6. International Space Authority **
7. Eradication of land mines using space technology
8. SGF Follow-up **
9. Declaration of Human Rights in Space
10. Applications of life support system research to terrestrial sustainable development
11. Evolving outposts on Moon, Mars and Beyond
12. Accessible Global Space Science Archive
13. Matchmaker role of U.N. entity for aligning high risk, large benefit research with organizations with funding
14. Establishment of International Centre for Space Medicine (ICSM) **
15. International Space Chamber of Commerce **
16. Creation of an international travelling space exhibit
17. Space Day
18. Grand unification of space advocacy – Space Charity
19. Classrooms in Space
20. Action plan for meeting the world's basic needs through technology **
21. Nobel Space Prize **
22. U.N. Space Youth Advisory Council **
23. "Space without Frontiers" (International nonprofit organization with volunteer members)
24. Space-based ozone generation or UV filtering
25. Direct application of space technology to the environment
26. International Bank for Space Development
27. International promotion of initiatives to solve the access-to-space paradigm
28. Information on space science in all languages
29. Declaration supporting international human Mars exploration, and common sense recommendations for U.N. involvement
30. Space Education Forum (S.E.F.)
31. The Flag of Earth
32. Extra-terrestrial Archive To preserve Human culture (E.A.R.T.H.) time capsule
33. E.T. ethics forum for youth
34. U.N. Committee on the Long-Term Survival and Prosperity of Humanity
35. Global Plan for Space in the 21st Century
36. Infrastructurisation of Space
37. Convention to maximize the civilian use of all space dual assets
38. Planetary defense/protection **
39. Adaptation of, and to, new environments
40. Utilization of Space Activities to Enhance the Quality of Life for Humans with Special Needs
41. Cosmic energy system, research for human benefits
42. Decade of Astrobiology
43. Ideas Foundation "If"
44. Construction of a biosphere off Earth
45. Worldwide fund for sustainable development from space
46. International music festival in space
47. Development of pollution-reversing technologies
48. International Technology Fund (ITF)
49. Space Safety Organization

** After a vote at 13:00 on 23 July 1999, the Delegates of the Space Generation Forum selected these ten proposals for deeper study and possible recommendation to the UNISPACE III Delegates.

Recommendation # 1

Parallel Session and Topic: Education

Short Title (less than 10 words): Education Without Frontiers: A Global Education Curriculum

Goal of Recommendation (approx. 40 words):

- Bring knowledge to 6 billion people at any time, anywhere.
 - Increase public support for space development for global benefit.
 - Mobility of knowledge without political boundaries.
 - Increase public awareness of space technology benefits.
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Recommendation (approx. 40 words):

OOSA and UNESCO should develop a space education curriculum to be implemented by U.N. member states into their education curriculum. The dissemination of resources and knowledge should be a cooperative effort between corporations, NGO's, and governments [on both a domestic and international level] to improve literacy.

Actions to be taken (approx. 100 words):

- Establish a government funded satellite array devoted to tele-education for the benefit of the global community.
 - Establish a primary and secondary education analog to the International Space University: begin with summer programs and expand to year long transfer programs.
 - Create a comprehensive space education curriculum, including the creation of textbooks applicable to a variety of education levels.
 - Create a "Space In a Box" program analogous to the international rotary club's "School In a Box" program for developing education systems.
 - Construct an educational internet site devoted to teaching literacy through images and graphics.
 - Promote corporate involvement and the creation of corporate classrooms.
 - Education needs to be fun: Utilize toys and hands on learning whenever possible. (Develop cartoon characters, comics and toys on international level)
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Presenter: Mark Dejemk / Kevin Hand

Recommendation # 2

Parallel Session and Topic: "Human Mind" Arts and Humanities

Short Title (less than 10 words): Creation of a global space library

Goal of Recommendation (approx. 40 words):

The goal is to bridge the gap between the sciences and the arts by creating a global archive of the space arts and sciences and giving convenient access for professionals and the public.

Recommendation (approx. 40 words):

We recommend the creation of a global space library to maintain a collection of space media including literature art works, paintings, historical documents and multimedia.

Actions to be taken (approx. 100 words):

- Interconnecting the Office of Outer Space Affairs database of Space Activities, ISU Library and Library Archives around the world (including Space Agencies)
 - A possible arrangement would be a few main facilities with a large internet presence and branch libraries in less developed countries for access and traveling exhibits. This would create a resource for artists, students, historians and the general public.
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Presenter: Holly Henry / Chad Ohlandt

Recommendation 3

Parallel Session and Topic: Y3, Development of Society and Meeting Basic Needs

Short Title (less than 10 words): Priority access to mobile satcom network for disaster emergency relief

Goal of Recommendation (approx. 40 words):

To ensure that disaster/emergency relief workers have priority access to mobile satellite communication networks during disasters/emergency.

Recommendation (approx. 40 words):

The UN and the mobile satellite communication operators shall work together to establish a memorandum of understanding (MoU) for priority access to mobile satellite communication networks during disasters and emergencies.

Actions to be taken (approx. 100 words):

- UN to invite mobile satcom operators to a disaster and emergency relief forum
 - UN and mobile satcom operators to continue to work together to asses what is needed during a disaster/emergency and what would be provided and how
 - UN and mobile satcom operators to establish the MoU
-

Presenter: Latif Lokman/John Mugwe

Recommendation # 4&5

Parallel Session and Topic: Human Mind / Outreach

Short Title (less than 10 words): Coordinated International Marketing Strategy for Space

Goal of Recommendation (approx. 40 words):

- To fully integrated space into society by increasing awareness worldwide
 - To involve younger generations with the effect of broadening employment in the space sector and the economic potential of commercial activities
 - To improve international cooperation with the effect of bringing the world's cultures closer together and to reduce unnecessary duplication in scientific and technological research
-

Recommendation (approx. 40 words):

We recommend that the U.N. coordinate and international marketing strategy for space.

Actions to be taken (approx. 100 words):

- The U.N. should be responsible for the evaluation and definition of the appropriate mixture of marketing programs. For example the U.N. could suggest that the space agencies implement product trials, similar to what was done with the Mars Pathfinder mission
 - i.e. A space agency could send a duplicate rover to the moon or mars that could be directly controlled by the general public (worldwide) via the internet.
 - The U.N. should coordinate access to prominent regional personalities and celebrities, such as Nelson Mandela, for the space agencies, to develop more personal and substantial links between the cultures of the world and space.
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Presenter: Josh Izenberg, Mark Matsamura

Recommendation 6

Parallel Session and Topic: International, International Co-operation

Short Title (less than 10 words): International Space Authority

Goal of Recommendation (approx. 40 words):

An International Space Authority is proposed to allow:

1. Oversight and enforcement for the balanced regulation of multiple interests in space.
 2. Access for all peoples to the material benefits and knowledge and understanding enabled by the exploration and use of space resources.
 3. Pooling of national and industry resources for the creation of space infrastructure, missions and enterprises for optimal development of large-scale space endeavors.
-

Recommendation (approx. 40 words):

Operating Principles of the ISA

1. The ISA regulatory regime would encourage commercialization and the harnessing of competitive market forces to the maximum extent possible, in the course of safeguarding a responsible balance of multiple interests in space, e.g. science, commerce, security and the environment.
2. Consistent with its charter to ensure access to all peoples, all UN members and appropriate NGOs would have a substantive voice in recommending ISA policy and regulations.
National voting representation in ISA, with respect to its regulatory regime, would be in proportion to national budgetary commitments to space exploration and use.
3. Close coordination with appropriate industry-based bodies, e.g. the SGF-recommended International Space Chamber of Commerce, would be maintained to ensure optimal balancing of each organization's respective regulatory and industry roles.

Key Benefits

- Protection of the Earth's solar system environment for the sustainable use of future generations
 - Forum for communication between spacefaring and non-spacefaring peoples
 - Legal framework favorable to space investments
 - Better and more effective distribution of space resources and benefits for all peoples
-

Actions to be taken (approx. 100 words):

Possible Activities

Possible ISA activities include regulations for mitigation of space debris hazards, standards for remote sensing, and licensing and fee schemes for use and development rights on the Moon and other planetary bodies. Regional offices of the ISA would be established to help assess area needs, facilitate training and personnel exchanges. Ultimately these regional offices would assist in distributing space benefits.

Actions for implementation

Members of the Space Generation Forum will further detail this proposal, in consultation with its sponsors, the ISU, the OOSA, and national and industry concerns. SGF members would then coordinate and advocate both within their own constituencies and among sponsors.

Comments

The International Space Authority would function much like the International Telecommunications Union, (ITU), but with more "teeth" for enforcement. The ISA would build from OOSA's existing resources. Over time, funding to facilitate larger-scale endeavors in space would derive from the sale of exploration rights licenses, commercial development fees, etc. Such fees would be tightly monitored in consultation with the appropriate industry body to ensure that they did not become prohibitive to sustainable space development.

Presenter: Lewis Pinault

Recommendation # 7

Parallel Session and Topic: International

Short Title (less than 10 words): Eradication of land mines using space technology

Goal of Recommendation (approx. 40 words):

Landmines, a scourge of the modern world, should be relegated to history by an innovative combination of military remote sensing technology and civilian distribution methods. The system emerging from this combination would complement existing U. N. programmes, for example search and rescue and would catalyse new services addressing the global issues of peacekeeping (including refugee tracking) and domestic security (including crime).

Recommendation (approx. 40 words):

Create an internal U.N. body tasked with implementing a multi-purpose humanitarian monitoring system. This system will initially focus on the reduction of human suffering from war, by means of landmine identification using a range of airborne and space-based facilities. The raw data required for this will be processed and distributed by the U.N. body in order to prevent misuse. It is proposed that international funding be sought through U.N. channels, and that humanitarian organisations such as the International Red Cross also be approached for assistance. Technology developed exclusively for this system could then be transferred back to supporting nations.

Actions to be taken (approx. 100 words):

A five step process will implement this recommendation:

- 1) Create the internal U.N. body and task it with determining feasibility and appropriate technology for the task.
 - 2) Approach commercial and military owners of space remote sensing facilities to request sponsorship of raw data covering the geographical regions of interest (e.g. recent war zones protected by land mine treaties).
 - 3) Add dedicated monitoring capability, in the form of time on low-cost balloons and high altitude long endurance (HALE) aerial platforms. Images obtained from spare capacity on both civil and military satellites would complement airborne data, offering broader and less intrusive coverage.
 - 4) Additional funding and support should be found to create a dedicated space segment, which should also begin to address wider needs, including displacement of refugees and search & rescue.
- ◆ System capability could be developed further to monitor domestic problems including crime.
-

Presenter: Adam Baker

Recommendation 8

Parallel Session and Topic: Blue: International Co-operation

Short Title (less than 10 words): SGF Follow-up

Goal of Recommendation (approx. 40 words):

- Involve those who will live the legacy of UNISPACE III in the process
 - Validate the legitimacy/effectiveness of SGF
 - Provide individuals with a voice including the under-represented
-

Recommendation (approx. 40 words):

SGF should be held every 5 years with a revisit every year.

Actions to be taken (approx. 100 words):

- Attach to IAF for revisits (not part of IAF but held at same place)
 - Always keep UN affiliation
 - Funding resources for organisational staff
 - Keep ISU link
-

Presenter:

Recommendation 9

Parallel Session and Topic: Blue, International Cooperation

Short Title (less than 10 words): Declaration of Human Rights in Space

Goal of Recommendation (approx. 40 words): The Declaration of Human Rights in Space is designed to provide all people with basic human rights regardless of their location in the universe, or State of launch.

Recommendation (approx. 40 words):

The Declaration of Human Rights will cover all humans in the definable universe whether on Earth, a planetary body, or travelling through space. It will give them the overall right to lead peaceful lives without disturbance by malice or threat, from the action or inaction of other human beings.

Actions to be taken (approx. 100 words):

The UN will take into consideration of the spirit and body of the Geneva convention, and other such documents that outline the basic rights of humans. A Declaration shall be developed which outlines the rights of humans while in the environment of space. Such rights shall include all aspects of natural biological processes necessary for the maintenance of life.

All people of the Earth will be encompassed by this Declaration regardless of point of launch, or perceived state of origin.

Presenter: Linda Parker

Recommendation # 10

Parallel Session and Topic:

Blue – Environment – (20/7/99 Tuesday)

Short Title (less than 10 words):

Applications of life support system research to terrestrial sustainable development.

Goal of Recommendation (approx. 40 words):

The purpose is to bring about practical means for an ideal individual (/society) who is openminded with a global vision, careful with resource use.

Maximum resource efficiency is aimed with minimum resource waste.

Recommendation (approx. 40 words):

Action should be taken to identify and employ techniques used in space for sustainable consumption on Earth. Further research should be performed into both fields.

Actions to be taken (approx. 100 words):

- Explain to the people living on Earth, the research done for the life support system of an astronaut.
 - Encourage research for maximum efficiency of individuals' lives.
 - Encourage space research proposals to cover reflections for better/sustainable life on Earth.
 - Reflect the philosophy of sustainable space station to man/society on Earth.
-

Presenter:

G. Asli Sezer

Recommendation # 11

Parallel Session and Topic:

Green, Science and Technology (Tuesday)

Short Title (less than 10 words):

Evolving outposts on Moon, Mars and Beyond

Goal of Recommendation (approx. 40 words):

Establish a permanent and evolving international presence on the Moon, Mars, and other vantage sites in the Solar System, of benefit to humanity.

Recommendation (approx. 40 words):

Install an evolutionary sequence of robotic outposts for scientific investigations (geoscience, astronomy, life science), resource utilization and infrastructure development for human expansion in the Solar System.

Actions to be taken (approx. 100 words):

UN should invite space agencies and institutions to participate in

1. Study and implementation of surface-orbiting precursor outpost on Moon and Mars for science and exploration.
 2. Worldwide public data access via internet, and integration in a global Space Science Archive with previous data.
 3. Develop experiments for resource utilization and deployment.
 4. Building of advanced robotic international village.
 5. Prepare for human settlement.
 6. Use as permanent base for expansion.
-

Presenter:

Ulrike Heiter
Martin Kukla

Recommendation 12

Parallel Session and Topic: "Science and Technology", Science

Short Title (less than 10 words): Accessible Global Space Science Archive

Goal of Recommendation (approx. 40 words):

To allow scientists from developing countries to get inexpensive access to scientific knowledge and data, and therefore to allow bright people around the world to contribute to scientific endeavours.

Recommendation (approx. 40 words):

To develop a Global Space Science Archive by networking satellites for the transmission of scientific knowledge.

Actions to be taken (approx. 100 words):

Developing countries would ideally build their own satellites as their contribution to the network, and would obtain cheap and open access to the archive in return. There would also be some access for education and public outreach purposes, with an emphasis on youth. Contributions to the archive would be regulated by an independent international scientific body.

Presenter:

Recommendation # 13

Parallel Session and Topic:

Green, Science and Technology-Access to Space (Tuesday)

Short Title (less than 10 words):

Matchmaker role of UN entity for aligning high risk, large benefit research with organizations with funding.

Goal of Recommendation (approx. 40 words):

The ability of individuals to pursue high risk research with the potential for breakthrough benefits greater than limited to the funding immediately available. But often these are initiatives or ventures globally that have aligned. This recommendation will pair the two.

Recommendation (approx. 40 words):

UN supported individual risk ventures and research on affordable access to space through establishment of a matchmaking recommendation and international proposal agency.

Actions to be taken (approx. 100 words):

7. Establishment of a UN quantifiable risk project review that enables the high risk, breakthrough benefit projects while filtering proposals of little payoff or potential.
-

Presenter:

Myles Walton

Recommendation # 14

Parallel Session and Topic:

Green, Miscellaneous (Tuesday)

Short Title (less than 10 words):

Establishment of International Center for Space Medicine (ICSM)

Goal of Recommendation (approx. 40 words):

1. To act as an expertise center for space medicine
 2. To provide a space medicine specialization facility and global referral service
 3. To promote the direct applications of technological advances in space medicine to society
-

Recommendation (approx. 40 words):

We recommend the establishment of an International Center for Space Medicine to provide a sound basis for the creation, distribution and implementation of state-of-the-art space medicine and its applications for the benefits of humankind on Earth and in space.

Actions to be taken (approx. 100 words):

In the coming decade, an international group of health professionals shall create a network with the goal of establishing the ICSM. The ICSM shall be built upon by the financial and in-kind investures of various member organisations. Moreover, in time, financial resources shall be added: technology transfers, medical licensing and certification, etc.

Once funding is acquired, the following actions of the ICSM shall be initiated:

- Promote basic and clinical space medical research by e.g. - including space medicine in medical curriculae.
 - Archive scientific data
 - Campaign for awareness of space medicine applications for public and medical professionals
 - Act as an advisory board for biomedical issues
 - Facilitate the transfer of space technology to benefit humankind, especially in developing countries and for people with special needs
 - Accelerate an exploration of space through creation of space hospitals to ensure safe human presence in space
 - Set medical standards for health certification of future space tourists
 - Act as a legal board for liability issues in space medicine
-

Presenter:

Carol Chahine
Marlène Grenon

Recommendation # 15

Parallel Session and Topic: “Science and Technology” Commercialisation

Short Title (less than 10 words): International Space Chamber of Commerce

Goal of Recommendation (approx. 40 words):

- Accelerate commercial ventures in space exploration & development
 - Provide a global forum for space industry to initiate and pursue partnerships with government, academia, NGO's, etc.
 - Leap-Frog developing nations into the space age
 - Promote public awareness and understanding of all space-related issues
-

Recommendation (approx. 40 words):

To create an international entity charged with maximizing the economic value of all space activities. This is to be achieved by facilitating long-term investments to accelerate space exploration and development, bring full benefits of space technology to all nations, and promoting public awareness globally.

Actions to be taken (approx. 100 words):

- SGF working group dedicated to the establishment of initial infrastructure & formation of entity
 - Preliminary industry presentation and generation of feedback at Unispace III
 - Formation of cross-sectional advisory task force to assist SGF working group
 - Development of initial conceptual business plan, including market research & finance opportunities
 - Presentation of business plan for consideration by space community at IAF '99 (October)
 - Recommendation to ISU as next available design project
 - In-Principle endorsement of key players
 - Development of detailed strategic plan for full implementation
-

Presenter: Andrew Hoppin & James Keravala

Recommendation # 16

Parallel Session and Topic: “Human Mind” Education

Short Title (less than 10 words): Creation of an international travelling space exhibit

Goal of Recommendation (approx. 40 words):

To implement an outreach and education program on space science and technology that is able to reach children and adults of both developed and developing countries, regardless of their access to internet, television, etc...

Recommendation (approx. 40 words):

The U.N. should endorse the creation of an international travelling space exhibit that will bring educational and exhibition material (provided by the participating international and local space agencies or associations) to promote space science in developed and developing countries.

Actions to be taken (approx. 100 words):

The role of the U.N. will be to endorse the exhibit and request the different space agencies to provide the necessary educational material (videos, hands-on activities, educational packets), exhibition material (space hardware, memorabilia, posters, etc.) and human resources (staff, educators, astronauts (?)) for the exhibit. Local space-related organizations, generally poorly known by the public in developing countries, should be invited to participate to promote their activities and to inform local public about the possibilities of involvement in space-related programs. The exhibit will travel to key cities and the message will be spread by local media and attendees

Presenter: Patricio Figueredo

Recommendation # 17

Parallel Session and Topic: Public Awareness & Outreach

Short Title (less than 10 words): Space Day

Goal of Recommendation (approx. 40 words):

- Raise public awareness of space usage
 - Promote benefits of Science, Engineering & Technology to society
 - Promote range of interdisciplinary topics via use of space
 - Create general public sense of involvement in space activities
-

Recommendation (approx. 40 words):

To establish a global space day on which the benefits of the interdisciplinary, international, intercultural aspects of space exploration and application can be promoted and celebrated in a unified effort to raise public awareness.

Actions to be taken (approx. 100 words):

- Establish SGF working party to explore concept further
 - Define structure of coordinating body
 - Define national level committees
 - Promote establishment of community level projects
 - Define promotional activities
 - Raise space community awareness
 - Establish project development plan for full implementation
-

Presenter: Guillemo

Recommendation # 18

Parallel Session and Topic:

Yellow – Public Awareness (Tuesday)

Short Title (less than 10 words):

Grand unification of space advocacy- Space Charity

Goal of Recommendation (approx. 40 words):

To unite the efforts of governments, individuals, associations and space agencies in promoting space applications.

Recommendation (approx. 40 words):

We recommend that the United Nations initiate and acknowledge an international programme in which the many existing stakeholders in space outreach may participate.

Actions to be taken (approx. 100 words):

- Develop a UN council on which all international stakeholders in space outreach may sit
 - Develop a programme of international activities to promote cooperation between stakeholders (i.e. Space Day)
 - Attempt to offset the “NASA bias” (e.g. Australian students knowing more about NASA than the Australian Space Agency)
 - Encourage a socially conscious attitude towards space outreach
 - Promote locally focused outreach activities that educate people as to how space activities can directly improve social conditions
 - Inaugurate a space charity to fund these endeavours.
-

Presenter:

Aaron Chippendale

Recommendation 19

Parallel Session and Topic: “Human Mind”, Education

Short Title (less than 10 words): Classroom in Space

Goal of Recommendation (approx. 40 words):

Use the space environment to teach unique and valuable lessons to students throughout the world.

Encourage young people to value learning.

Inspire the next generation of teachers.

Take the first step toward a permanent school in space.

Recommendation (approx. 40 words):

The United Nations shall challenge the International Space Station to include a small payload of educational materials and provide a teacher astronaut who will teach lessons that will be shown in classrooms around the world.

Actions to be taken (approx. 100 words):

Issue a challenge to the International Space Station to create an “educational payload” that will be used by a teacher astronaut. The lessons shall be recorded and distributed to classrooms throughout the world by radio, television, and internet. These lessons can be used to enhance classes in many subjects, including geology, physics, biology, astronomy, environmental science, politics, geography, and psychology. Once teachers regularly live in space, the next logical step is to send students into space. Ultimately, it will be possible to establish a permanent international school in space.

Presenter: John Feighery

Recommendation # 20

Parallel Session and Topic:
Yellow, Meeting basic needs

Short Title (less than 10 words):
Action plan for meeting the World's Basic Needs through Technology

Goal of Recommendation (approx. 40 words):

- 1) Assess on a local level the technical needs of a developing country or cultural group
 - 2) Create a unique solution for those needs
 - 3) Ensure as little negative impact from technology as possible
 - 4) Staff & Fund the program in a way that encourages interactive involvement
-

Recommendation (approx. 40 words):

Many programs throughout the world currently exist with the ideal of reaching developing countries with need-solving technologies. Under this plan, a program would implement the technologies with cultural & ecological sensitivity in exchange for the discontinuation of globally harmful activities.

Actions to be taken (approx. 100 words):

A two step plan would be used to determine a first cut of basic needs for a region. A team would visit an area (~5 small countries) for a short time (~10 wks) surveying from locals what they need from technology.

Another team would work in parallel to analyze the existing data on the region (remote sensing, rainfall, pollution, health statistics, etc.) to determine the global basic needs that are deficient. These teams would then combine their findings and generate a recommendation for what technology needs to be implemented in the region to solve the regions basic needs problems. After a re-look at what effects the technologies will have on the region, and implementation plan would be put into effect. The progress of the region would be monitored to assure the plans work.

Potential methods for funding of technology projects:

- 1) Foster Country plan. Technology deficient and needy countries of the world could be rated relative to each others basic needs deficiencies. Industrialized governments could then provide relative tax break incentives to their industries which invest money (for technological solutions of basic needs) in the needy countries.
- 2) Shared risk investments in technology between industries and local governments to take advantage of sustainable resources. Example: The local government and worldwide high-tech industries share start-up costs on implementing new technologies in needy areas. Investors receive dividends on investments as percentage of future worth, and the implemented sustainable technology saves and makes money for the local government.

Personnel resources

- 1) Educational curriculum. Challenge industrialized countries to add requirements in higher education curriculums that fosters student involvement in implementing technology in needy countries.
 - 2) Loan forgiveness (Worldcorps). Governments help repay loans of students who volunteer their skills in assisting needy countries in implementing technological solutions to basic needs.
 - 3) (Inter)national prestige programs. A program to recognize individuals who technologically contribute to "needy" countries. Their recognition would be proportional to their contribution. i.e. Humanitarian medal awarded for 1-2 months of volunteer service . . . a "presidential knighthood" bestowed on those who contribute 1 year or more. . .etc.
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Presenter: Annie Feighery

Recommendation # 21

Parallel Session and Topic: How can international cooperation In Space Activities Benefit Society

Short Title (less than 10 words): Nobel Space Prize

Goal of Recommendation (approx. 40 words):

This prize is intended for the recognition of outstanding achievements for the peaceful application of space for the benefit of society. It is then envisaged this prize will:

- Advocate the peaceful uses of space.
 - Highlight the awareness of achievements of bringing space closer to society.
 - Promote international cooperation through professional interaction.
-

Recommendation (approx. 40 words):

It is recommended a Nobel Space Prize be introduced.

Actions to be taken (approx. 100 words):

- Contact the secretary of the Novel Symposium Committee.
 - Identify outstanding achievements from the past, and utilise them for instigation of a precedence for the award.
 - Contact Swedish Space Agency for funding.
-

Presenter: Neal Fennell

Recommendation # 22

Parallel Session and Topic: “International” International Cooperation

Short Title (less than 10 words): U.N. Space Youth Advisory Council

Goal of Recommendation (approx. 40 words):

The U.N. Committee for the Peaceful Uses of Outer Space, Youth Advisory Council (YAC) will:

- Provide a voice for youth within the United Nations
- Ensure that developing countries play an active role in global space issues
- Form a sustainable cooperation between the Space Generation Forum and the Committee for the Peaceful Uses of Outer Space

This will build upon the precedent set by the United Nations Environmental programs Youth Advisory Council.

Recommendation (approx. 40 words):

We are the Space Generation! We have a responsibility to take an active role in the promotion and development of space. We recommend that a youth advisory council is granted as part of the U.N. Committee for the Peaceful Uses of Outer Space (COPUOS).

Actions to be taken (approx. 100 words):

- Formation of an international, intercultural Youth Advisory Council (YAC) in the second week of the Space Generation Forum (SGF)
 - Further promotion of ideas developed within the SGF to the United Nations.
 - Annual Organization and Coordination of future SGF activities with the cooperation of ISU.
 - Development of a sustainable space generation network using the existing SGF framework.
 - Development of a global youth outreach strategy for the future promotion of space activities.
 - Formation of working groups in six areas of concentration
 1. Policy, Law & Commercialisations
 2. Science, Technology and the Environment
 3. Philosophy, Ethics, and Religion
 4. International Cooperation
 5. Outreach and public awareness
 6. Space for sustainable development and meeting basic human needs
 - Continuation and enhancement of the online discussion network developed for the SGF, and presentation of ideas to the UN COPUOS.
-

Presenter: Loretta Hidalgo

Recommendation # 23

Parallel Session and Topic:

Blue – International Cooperation (Tuesday)

Short Title (less than 10 words):

“Space Without Frontiers” (International nonprofit organization with volunteer members)

Goal of Recommendation (approx. 40 words):

1. Make use of under-used or old space technologies (telecommunications, remote sensing, Earth observation, launch opportunities)
 2. Space technology access to developing countries and victims of natural disasters or war
 3. Increase visibility of space technology corporations (marketing public relations opportunities)
 4. Increase space awareness of benefits to society and therefore public support in space activities
-

Recommendation (approx. 40 words):

To create an independent international non-profit organization to support the utilization of under-used or old space technologies (listed above) for developing countries or victims of natural disasters or war.

Actions to be taken (approx. 100 words):

- Creation of “Space Without Frontiers”
 - Fully document existing, under-used or old space technologies into an ongoing updated database
 - Identify and recruit volunteers from the space field (ISU, space agencies, SGF, SEDS, OOSA, space corporations) to support the projects
 - Work with existing international organizations (Red Cross, OXFAM, Medecins Sans Frontiers) to identify the needs of developing countries or victims of natural disasters or war
 - Make agreements with service providers of space technology for sponsorship (in form of services, money, time, hardware...)
 - Efficient implementation and operation of each project
-

Presenter:

Mark Dejmek

Recommendation 24

Parallel Session and Topic: Blue: Environment

Short Title (less than 10 words): Space based ozone generation or UV filtering

Goal of Recommendation (approx. 40 words):

Complete restoration of the ozone layer – or a method to filter UV radiation to protect life used to a complete ozone layer.

Recommendation (approx. 40 words):

Develop a satellite system to re-generate ozone in the stratosphere and restore the ozone layer to a ‘healthy’ level. A UV filtering system or shield to protect areas under the ozone hole. These would be organized with UN co-operation.

Actions to be taken (approx. 100 words):

- Internationally co-ordinated effort to reverse man-made
 - Organised with UN charter and sponsorship (CEOS, IPCC)
 - Technical details to be determined
-

Presenter:

Recommendation # 25

Parallel Session and Topic:

International - Environment

Short Title (less than 10 words):

Direct application of space technology to the environment

Goal of Recommendation (approx. 40 words):

Extend the focus of UNISPACE III proposals from not only monitoring, but include the direct use of space technology for the environment

Recommendation (approx. 40 words):

Directly apply space technology to improving Earth's environment – such as

- space based energy (Solar, He3)
- mirrors (illumination for disasters and otherwise)
- water conservation and recycling agricultural technology

Actions to be taken (approx. 100 words):

UN should encourage space agencies to develop enabling technologies and disseminate them to industry and less developed countries.

Presenter:

Kevin Hand
Chad Ohlandt

Recommendation # 26

Parallel Session and Topic: Science/Technology

Short Title (less than 10 words): International Bank for Space Development

Goal of Recommendation (approx. 40 words):

This recommendation was suggested as a means of pooling a “Critical Mass” of financial capital to be made available to long-term research, start-up ventures, and other worthy space-related enterprises (i.e. incubator projects) to meet the large-scale financial requirements of the space industry.

Recommendation (approx. 40 words):

An international bank for space development should be created to the end of funneling investment capital into the space industry, irrespective of national origin.

Actions to be taken (approx. 100 words):

The IBSD will be created by the purchase of shares on the part of governments, corporations, space agencies, non-governmental organizations and other interested parties. Its initial mandate will be the issuance of long-term loans, entrance into joint ventures with developing corporations, support of incubator projects, and other means (such as matching venture capital with short-term high risk high payoff research) to direct much needed financial capital to the developing global space industry.

Presenter: Kenneth Murphy

Recommendation # 27

Parallel Session and Topic: Science & Technology

Short Title (less than 10 words): International promotion of initiatives to solve the access-to-space paradigm.

Goal of Recommendation (approx. 40 words):

Wide ranging support for initiatives to generate innovative solutions to the access-to-space problem, with an emphasis towards lowering of costs, improving reliability and increasing the environmental cleanliness of current launch options.

Recommendation (approx. 40 words):

The United Nations should publicly support innovative programs for space development. The primary thrust should be towards cheaper access-to-space, which is the primary enabling technology for enabling space development. A fund should be established to encourage new ventures and research into alternative launch options

Actions to be taken (approx. 100 words):

- ◆ UN endorsement and further promotion of current access-to-space initiatives, in particular the X-prize and the CATS (Cheaper Access To Space) award.
 - ◆ Encourage the inclusion of access-to-space pioneers in nominations for the proposed Nobel Space Prize.
 - ◆ Collate and disseminate information on means of raising funding for access-to-space research, for use by startup enterprises.
 - ◆ Establish a space charity to raise funding for breakthrough propulsion research.
-

Presenter: Adam Baker

Recommendation # 28

Parallel Session and Topic:

Green - Science

Short Title (less than 10 words):

Information on space science in all languages

Goal of Recommendation (approx. 40 words):

Create a framework to educate and share information on space science in all languages

- to make all decision makers understand space science
 - to get public interest
 - to get more money to space science
-

Recommendation (approx. 40 words):

We recommend for the UN to set up bodies to

- translate space science to all languages
 - to enter these into a Global Science Archive
 - to consult the decision makers
-

Actions to be taken (approx. 100 words):

Presenter:

Krista Kokkonen

Recommendation # 29

Parallel Session and Topic:

Human Mind (Yellow)

Short Title (less than 10 words):

Declaration supporting international human Mars exploration, and common sense recommendations for UN involvement

Goal of Recommendation (approx. 40 words):

The delegates of the Space Generation Forum, representing 6 continents and over sixty nations, declare their commitment to the initiation of human exploration of Mars.

We believe that reaching this goal, and the global effort leading towards it, will profoundly affect the way in which we live together on Earth.

Recommendation (approx. 40 words):

We hereby proclaim that such exploration must be international from the start and that the knowledge gained must be shared for the benefit of all humanity.

The UN must do its part to facilitate the global nature of this effort, work to prepare all humanity for the profound effects of Mars exploration, and acknowledge the significance of our commitment today.

Actions to be taken (approx. 100 words):

1. The official dissemination of this declaration will hold significant power. The SGF organizing committee should work to publicize it through all means at its disposal.
 2. Toward that end, a short document should be drafted that expresses the reasons underlying our support, and distributed to all interested parties. This document should recognize:
 - How traveling to Mars together will bring us closer on Earth
 - How learning about the Martian environment will teach us about our own
 - How the endeavor's inspirational nature will reinvigorate the human spirit and spur our schoolchildren to new heights
 - How investigating the possibility of life on Mars will teach us fundamental lessons on humanity's place in the universe.
 3. The UN's OOSA should further explore reasonable areas of international cooperation and operation, and explore scenarios for international missions
 4. OOSA should consider assessing the public opinion on Mars and its exploration from all regions of the globe.
-

Presenter:

George Whitesides

Recommendation 30

Parallel Session and Topic: HUMAN MIND / Education

Short Title (less than 10 words): SPACE EDUCATION FORUM (S.E.F.)

Goal of Recommendation (approx. 40 words):

To reawaken the sleeping creativity of and create a space vision within the post Apollo generation of young people around the world, to generate the large scale public support needed for a human expansion into space.

Recommendation (approx. 40 words):

Conduct a recurring (1-5 year) 'space education forum', conducted along similar lines to the Space Generation Forum which will bring together top specialists in space education, policy makers and students. The objective of each forum will be to create a road map for realising space education objectives.

Actions to be taken (approx. 100 words):

This recommendation can be initiated immediately using the proposals from the 1st SGF, including the 'Space Day' and the 'Travelling Space Exhibit', and well as the following new initiatives:

- ◆ Development of a space television programme emphasising the human interest facet of space exploration and development. This should be strongly supported by WWW educational material covering the science and technology issues raised in the programme.
 - ◆ Formation of broad curriculum guidelines which can be adapted by different countries to their own education standards in order to promote space awareness.
 - ◆ Creation of teams of 'space ambassadors' who will be responsible for implementing the proposals of the SEF on a local basis.
 - ◆ Construction of a 'space kit' for schools to use on a standalone basis. Kits could include background information on a theme (e.g. rocketry or remote sensing), some example hardware and experiments to illustrate the principles.
 - ◆ Produce a database of space resources with a view to building a collection of educational software, exhibits and printed matter (e.g. textbooks) for general access. The majority of the collection would be accessible via the Internet.
 - ◆ Continuation of the SGF-style 'thinktank' to produce further ideas for space education.
-

Presenter: Adam Baker

Recommendation # 31

Parallel Session and Topic: Human Mind // Arts & Humanities

Short Title (less than 10 words): The Flag of Earth

Goal of Recommendation (approx. 40 words):

There would be an internationally recognized symbol of humanity so that all people will feel that they are citizens of Earth and not divided by nationality.

Recommendation (approx. 40 words):

To adopt a flag as a symbol of all humanity that would be recognized and displayed by United Nations member states and on international space-crafts.

Actions to be taken (approx. 100 words):

- An example of such a flag would be “The Flag of Earth” originated by the SETI project to represent humanity to Alien Cultures. However a collaborative effort to identify a more appropriate international symbol could be arranged as a SGF follow-on activity.
 - The flag could be displayed at United Nations sites and in schools so that young children world over will acquire a global vision and identity.
-

Presenter: Juan Carlos Fernandez

Recommendation 32

Parallel Session and Topic: "Human Mind", Arts and Humanities, Public Awareness

Short Title (less than 10 words): Extra-terrestrial Archive To preserve Human culture (EARTH) time capsule

Goal of Recommendation (approx. 40 words):

1. To celebrate the new millennium and to usher in a new era of space activity.
 2. To increase public awareness and international cooperation in space through our common heritage and encouraging the mindset of one "Earth culture".
 3. To have a space activity that is fun and accessible to the general public.
-

Recommendation (approx. 40 words):

To develop and launch a time capsule into space early in the next century to mark humankind's evolution through their move into space. This cosmic archeological artifact, for future humans or alien beings would include cultural objects from every nation to preserve and represent the global culture of EARTH.

Actions to be taken (approx. 100 words):

1. Can be an SGF follow-on activity and coordinated through the U.N. to develop a working group for this project.
2. Each nation chooses the content of their contribution (subject to weight and size restrictions).
3. Each nation or organization can organize or coordinate events to get the public involved. (eg., contests, activities for children, art submissions).
4. Can serve as a kick-off program for further archiving of human culture.

Every nation on Earth will be encouraged to participate regardless of space-faring capability.

Presenter: Susie Beard

Recommendation 33

Parallel Session and Topic:

Yellow – Philosophy/Ethics/Morality/Religion

Short Title (less than 10 words):

Intergenerational, International Ethics Conference

Goal of Recommendation (approx. 40 words):

To bring together people from all backgrounds (religions, humanities, and sciences) to address the current absence of an outline of basic principles of ethical (and/or legal) relationships and codes of conduct for

1. Human exploration and exploitation of solar system and beyond
 2. Humans and other environments and life forms
-

Recommendation (approx. 40 words):

We recommend to convene an international, intergenerational, intercultural, interdisciplinary ethics conference, with particular emphasis on people from space and religion backgrounds,

- to formulate a set of basic principles
 - to establish a formal agreement or declaration of a code of conduct for
 1. Human exploration and exploitation of the solar system
 2. Interaction between humans and other forms of life or other non-terrestrial environments.
-

Actions to be taken (approx. 100 words):

Members of this SGF or any other international body shall gather together leaders, scholars, and experts from as many religious communities and space related fields (scientific, artistic, literary, technological) to establish a formal agreement on the ethics of space related exploration and activities.

Presenter:

Sebastiàn Brea

Recommendation # 34

Parallel Session and Topic: Human Mind: Philosophy, Religion, Morality, Ethics

Short Title (less than 10 words): UN Committee on the Long-Term Survival and Prosperity of Humanity

Goal of Recommendation (approx. 40 words):

To ensure long-term survival and prosperity of the human species

Recommendation (approx. 40 words):

Recognizing the immeasurable value of humanity, the possibility for extinction, and the deficiency of long-term survival perspectives, and recognizing the United Nations' significant influence on global policy, we recommend the formation of a United Nations committee to address the long-term survival and prosperity issues for the well-being of all humankind.

Actions to be taken (approx. 100 words):

Investigate the best mechanism for submitting a proposal to United Nations and begin the process of generating a formal proposal to the United Nations.

Presenter: Mark Lupisella

Recommendation 35

Parallel Session and Topic: "International", International Cooperation

Short Title (less than 10 words): Global Plan for Space in the 21st Century

Goal of Recommendation (approx. 40 words):

Provide a global plan for the international exploration and development of space. Assist space organizations with long-term planning and to identify areas of potential cooperation. Inspire the world's youth with a positive vision for the next millenium.

Recommendation (approx. 40 words):

The United Nations shall convene an international youth planning group to establish a Global Plan for Space development in the 21st century. The plan shall contain timely goals and research objectives for space development in the next 100 years, that will help in meeting the basic needs of society.

Actions to be taken (approx. 100 words):

Within two years, the United Nations shall call on delegates from all nations to produce a Global Plan for space development to set timely goals and research objectives that can be accomplished in the next 100 years. The delegates chosen shall be knowledgeable young representatives from all areas affected by space activity and reasearch, since it is the youth who will be the more affected by the plan. The plan shall provide an unbiased global vision focussed on meeting the expected basic needs of society. The plan shall be widely distributed and updated every 5 years.

Presenter: John Feighery

Recommendation 36

Parallel Session and Topic: Blue: International Co-operation

Short Title (less than 10 words): Infrastructurisation of Space

Goal of Recommendation (approx. 40 words):

Efficiently achieve a sustainable human presence in space.

Recommendation (approx. 40 words):

Develop a ground and space-based space infrastructure with global participation.

Actions to be taken (approx. 100 words):

Create a UN appointed task force to study the structure and implementation of the social, political, legal, and environmental aspects of such an infrastructure

Presenter:

Recommendation # 37

Parallel Session and Topic: “International” Military and International Security

Short Title (less than 10 words): Convention to maximize the civilian use of all space dual assets.

Goal of Recommendation (approx. 40 words):

To ensure the availability of as much military space technology, information, and assets as feasible for peaceful civilian applications.

Recommendation (approx. 40 words):

The SGF recommends that the United Nations brings about an agreement by all nations with a significant space military presence. This convention would open up to civilian use all dual space assets belonging to the nations, except those few that are strictly required for their national security.

Actions to be taken (approx. 100 words):

The U.N. promotes the negotiation, drafting, and signing of a convention to maximize the civilian use of all existing and future space dual assets.

This convention should ensure:

- a) The exchange of government’s space technology, information, and assets among nations seeking to share them for the benefit of humankind.
- b) No illicit use of this technology can be made by individuals, groups or organizations.

This convention would be a major success even if it is only signed by a few countries, if those countries are the major space defense players.

Nations should be willing to voluntarily sign this convention, since it does not require them to open up all their military technology, but simply work towards making available significantly more than they currently do.

Presenter: Guillermo Gonzalez

Recommendation 38

Parallel Session and Topic: International/Military and International Security

Short Title (less than 10 words): Planetary defence/protection

Goal of Recommendation (approx. 40 words): To ensure the protection and survival of the earth's population against near earth orbit (neo) objects.

Recommendation (approx. 40 words):

The SGF recommends that the UN recognize the outer space hazards/dangers which threaten our planet, and take adequate pro-active measures to mitigate/prevent the risks.

Actions to be taken (approx. 100 words):

- Encourage astronomers to take more attention to near-earth orbiting objects
- Create network (sub-networks) of observatories for information exchange on NEOs
- Plan and implement a defensive system by involving world universities, space agencies and military organizations

In this context, we must realise how very long it took man to notice the existence of the hole in the ozone layer and the severe threats it brings to us. Only then will we appreciate the possibility that, by not bothering to look, we may only perceive the threats of an incoming NEO when it is too late to implement valid protective measures.

Presenter: Myles Walton

Recommendation # 39

Parallel Session and Topic: International - environment

Short Title (less than 10 words): Adaptation of, and to new environments

Goal of Recommendation (approx. 40 words):

Some parts of future human generations will choose to leave Earth permanently. In travelling/exploring and inhabiting space, humankind will have to adapt to new (adverse) environments, and will consequently be affected by considerable changes in physiology, psychology, and sociology. It would be of obvious common interest to make these changes to be as harmonic as possible.

Recommendation (approx. 40 words):

Recognizing this, we propose that this need and its implications will be addressed in "Global Forum", for instance through an ethical advisory panel to UNESCO, to establish a basis for discussion of this development.

Actions to be taken (approx. 100 words):

A global forum needs to gather knowledge to address, especially the ethical, implications of the increased understanding of natural and directed (artificial) evolution.

The aim of this conference is to discuss whether there are suitable (ethical, practical and otherwise) methods, and if so, how to adapt living forms and/or environments.

Presenter: Brian Lundgren Jensen

Recommendation 40

Parallel Session and Topic: “Science and Technology”, Miscellaneous

Short Title (less than 10 words): Utilization of Space Activities to Enhance the Quality of Life for Humans with Special Needs

Goal of Recommendation (approx. 40 words):

Currently, the global space community appears to give little attention to how they could address the needs of humans with disabilities. If one of the goals of UNISPACE III is to stimulate the interest and imagination of all humanity through space exploration, we can no longer ignore individuals with special needs. They too have the right to explore the universe with the rest of the world.

Recommendation (approx. 40 words):

We seek to: 1) develop special education and public outreach material and activities; 2) increase the public’s awareness for the disabled through space activities; 3) promote the spin-off of space technology to address unique human disabilities; 4) promote job opportunities in space or space related fields; and 5) utilize microgravity to improve the quality of life for the elderly.

Actions to be taken (approx. 100 words):

- 1) Special Education in Public Outreach Material and Activities (Near-term)
 - Encourage every space agency around the world (eg., ASI, INPE, CNES, CSA, NASA, RSA, ESA, ISRO, NASDA, etc...) to develop education and public outreach material for disabled individuals (eg. Braille solar system charts, books-on-tape about space, etc...)
 - Establish a distribution network (sponsored by the United Nations) for translating and distributing the material to developing countries that cannot afford to produce the material/activities.
- 2) Public Awareness (Near-term)
 - The United Nations should encourage space agencies to be role models of humanitarianism by pioneering research to alleviate the constraints associated with programs to aid people who have disabilities.
- 3) Spin-off of Space Technology (Near-term)
 - With the endorsement of the United Nations, space agencies and space-related industry partners will establish technology transfer and technology development programs to aid people who have disabilities.
 - Scientists, engineers, and technicians at each space agency or corporation will have access to manufacturing equipment and facilities, and will form a team along with a disabled client and doctors, physiotherapists, family members, and rehabilitation specialists who will work together to design, build, test, and maintain custom assistive technology to improve the quality of life of the disabled person. A press release will be circulated to increase public awareness of the humanitarian efforts of the space industry and to inform other people who may have the same disability that the new technology is available.

Recommendation #41

Parallel Session and Topic: Green - Science

Short Title (less than 10 words):

Cosmic energy system, research for human benefits

Goal of Recommendation (approx. 40 words):

Space Science discussed very different topics. One of the main problems of society is energy. It impacts numerous aspects of society such as environment, economical, scientific etc. If we can express essential solutions they might come from space science activity, which should therefore be politically supported by the United Nations.

Recommendation (approx. 40 words):

Scientific research has to improve today's problematic energy status. Finding, production, storage, transmission, transportation, distribution should be investigated in detail. Creation of a new self-financing from purchasing the gained energy for other space science activities and various human beneficial projects should be realised in the near future.

Actions to be taken (approx. 100 words):

Scientific attention has to be concentrated on the search for a new useable (clean) kind of energy of the cosmos, not only restricted to solar energy. The research should take production, storage and distribution into consideration because there are all very important steps for controlling energy, e.g. plasma energy of the sun does not need to be discovered, but rather ways of transmission and transporting to Earth are to be worked out. A further objective of our idea is to enhance human energy requirements, and furthermore, to establish a new finance basis for space science projects without obvious spin-offs. If such energy systems using different sources of energy in the cosmos is installed properly, it might provide the human society with coritative, social and economical support.

Presenter: Bernard Seidel

Recommendation #42

Parallel Session and Topic: Green - Science

Short Title (less than 10 words):

Decade of Astrobiology

Goal of Recommendation (approx. 40 words):

As a body representing the collective conscious of nations through the world, we feel that the UN has a responsibility to address the issues- scientific, philosophical, and ethical- associated with the discovery of life in the universe, furthermore, it is essential that we consider the expansion, of the human biosphere in relation to human evolution and the evolution of independent organisms.

Recommendation (approx. 40 words):

We recommend that the UN declare a “Decade of Astrobiology” as a means of addressing issues associated with life in the universe, and the study of the living universe. This is a tangible, realizable goal which draws from a precedent set by the “Decade of the Sun” established by UNESCO for the sake of promoting, educating, and studying solar power.

Actions to be taken (approx. 100 words):

Define a ten-year period (e.g. 2002 to 2012), devoted to raising global awareness and facilitating, international cooperation as applied to the study of living universe.

Establish a consortium of experts (the best of the best) in the disciplines associated with astrobiology gathered with the common goal of exploring the implications, ethics, and consequences of the issues associated with astrobiology.

Education: It is critical that the global community – at all age levels – be made aware of the issues at hand. Implementation and SGF follow-up activities include such ideas as an international “planetfest,” a global “space day,” and the creation of an interdisciplinary curriculum to focus on the topic of astrobiology.

Presenter: Kevin Hand

Recommendation 43

Parallel Session and Topic: Green: Science

Short Title (less than 10 words): Ideas Foundation 'IF'

Goal of Recommendation (approx. 40 words):

The goal of this recommendation is to encourage the development and support of visionary ideas that could lead to major breakthroughs in space science. It is only through such broad minded ideas that we advance towards fully understanding and exploring the cosmos.

Recommendation (approx. 40 words):

We recommend that the UN instigates and supports an ideas foundation that:

- promotes the development of visionary ideas
- facilitates intellectual and financial support for follow-up research on these ideas

All with a view to initiating breakthroughs in space science.

Actions to be taken (approx. 100 words):

- Develop a co-ordinating committee
 - Initiate international ideas forums on specific space science fields
 - Ask these forums the question "IF you were granted any breakthrough in space science what would you do?"
 - Use the answers to identify key research topics in space science (ie identify required breakthroughs in science)
 - Fund research into realising the necessary breakthroughs
 - Through corporate sponsorship
 - Through a 5-10 percent donation of royalties from previous successful participant in IF
 - Award IF prizes to reward those who think boldly and those who support research of bold attempts to make breakthroughs in space science
-

Presenter: Aaron Chippendale

4) Job Opportunities in Space-Related Activities (Far-term)

- As humans become permanent inhabitants of space, the unique microgravity environment of space has the potential for opening new job opportunities for disabled people. Formerly confined to a bed or wheelchair, now such individuals could take advantage of the microgravity environment to curtail or eliminate the constraints of their disability. The United Nations should encourage employers in all nations to give such individuals fair and equal consideration for future jobs in space.

5) Utilize microgravity to improve the quality of life for the elderly (Far-term)

- Undertake further research projects comparing the physiological effects of aging (on Earth) to the effects of long-term exposure to microgravity on the human body. Results could lead to a better understanding of both the aging process and the astronauts' physical degradation (muscle atrophy, bone decalcification, etc...). By having a better sense of what causes this degradation, it may be possible to find a method to stop or even reverse the degeneration process. This could also lead to cures for degenerative diseases such as arterial lateral sclerosis (ALS), multiple sclerosis (MS), etc...
- Establish a retirement home in space for elderly people who have mobility problems. This would enable old people to float comfortably from place to place rather than being confined to a wheelchair. It would eliminate the need for hip replacements, crutches, canes, and wheelchairs. And what better way to promote space tourism than to have the families visit the residents on a regular basis. The kids would love a chance to visit Grandma if it means a trip to space!

Presenter: Dan Woods

Recommendation 44

Parallel Session and Topic: Green: Technology

Short Title (less than 10 words): Construction of a biosphere off Earth

Goal of Recommendation (approx. 40 words):

Encouraging commercial development of space transportation and through international collaborative efforts.

Recommendation (approx. 40 words):

Construction of a biosphere off Earth to increase our access to space for:

- Human settlement of solar system
 - Commercial extraction of resources
 - Science
-

Actions to be taken (approx. 100 words):

Presenter:

Recommendation 45

Parallel Session and Topic: Yellow session, Basic Needs, Tue 20/7/99

Short Title (less than 10 words): Worldwide fund for sustainable development from space

Goal of Recommendation (approx. 40 words):

- To develop long-term sustainable development programme, tailored to particular community needs
 - Provide a conduit through which developing nations are able to access space services (e.g. telecoms, remote sensing) free of political, cultural and national boundaries
 - To provide training and educational programs to ensure better utilization of available space services
-

Recommendation (approx. 40 words):

To create a non-governmental organisation (NGO) to gather voluntary contributions from governments,, agencies, industry and the general public for space related activities which promote sustainable development of under-privileged nations.

Actions to be taken (approx. 100 words):

- Form SGF working party dedicated to organisations formation and structural definition
 - Study operation of similar bodies (Oxfam, Worldwide Fund for Nature, Red Cross, etc)
 - Gather previously completed studies of sustainable developments need
 - Detailed study of example programs, e.g. Indian Space Research organisation`s integrated mission for sustainable development
 - Define `start-up` projects to raise public support
 - Explore `in-kind` support that can be provided by industry, e.g. remote sensing data, communication channels
 - Raise space community awareness via conferences, e.g. UN, IAF workshop
 - Establish development plan for implementation
-

Presenter: David Wade

Wild card recommendation 46

Parallel Session and Topic: Human mind – Public Awareness and Outreach

Short Title (less than 10 words): International music festival in space

Goal of Recommendation (approx. 40 words):

- Increase public awareness (participation) in space through music
 - Encourage diversity and international cooperation
-

Recommendation (approx. 40 words):

Develop and organise an international music festival to be broadcast from space to the entire world

Actions to be taken (approx. 100 words):

- Coordination begins in the UN and every nation is encouraged to contribute with performances
 - Can begin on the international space station and be broadcast back to earth using current infrastructure (communication satellites, TV, radio, internet)
 - Use “live from space” logo during live performances to raise public consciousness about the benefits of space technology
 - Funding from private companies (MTV, Coca-Cola, etc)
 - Performances can be done by astronauts or musicians on earth
 - The festival can become an annual event
-

Presenter: Susie Beard/Robert Panduru

Wildcard Recommendation 47

Parallel Session and Topic: “International”, Environment; “Science and Technology”, Science

Short Title (less than 10 words): Development of pollution-reversing technologies

Goal of Recommendation (approx. 40 words):

To apply existing and to-be-developed air/ground/water recycling technologies (developed for space travel and colonization) on a ground scale to reverse the effects of pollution on Earth.

Recommendation (approx. 40 words):

The United Nations should encourage the reversal of pollution of Earth’s environments, promoting the application of space-oriented recycling technologies to Earth’s continental resources.

Actions to be taken (approx. 100 words):

Technologies for the recycling or purification of valuable resources (water, air, etc...) exist or are being developed to be applied in a self-sustaining biosphere for space activities. The role of the U.N. is to promote the application/development of such technologies on a grand scale, so they can be used to reverse the effects of human pollution in terrestrial environments. The initiative will have a positive public response and will constitute a key example of how space technologies can be used to improve our quality of life and recover our planet.

Presenter: Patricio Figueredo

Wildcard Recommendation 48

Parallel Session and Topic: Blue: Knowledge Transfer

Short Title (less than 10 words): International Technology Fund (ITF)

Goal of Recommendation (approx. 40 words):

To ease the knowledge and technology transfer between developed and less developed nations.

Recommendation (approx. 40 words):

ITF could help developing nations to define their national and regional needs and provide the funds to sponsor feasible and profitable projects.

Actions to be taken (approx. 100 words):

- UN and the international banking organisations can provide the initial funds which will be used to define the needs and sponsor the first projects
- The information from the projects could be used as currency towards ITF by less developed countries
- ITF gives proposals and helps finding technology partners for the developing countries to start their projects
- The funds could be returned to ITF in the form of membership fees and percentage of the gains obtained by using the new technology (in mid or long term)

Observation: ITF would could work separate or as part of an international space commerce organism (ex the International Chamber of Commerce)

Presenter: Robert Panduru

Wildcard Recommendation 49

Parallel Session and Topic: Green: Commercialisation

Short Title (less than 10 words): Space Safety Organisation

Goal of Recommendation (approx. 40 words):

- Safe access to space
 - Safe operations in space
 - For prosperous commercial space activities like space tourism
-

Recommendation (approx. 40 words):

We recommend a UN endorsed establishment of an independent, international space safety organisation that will co-ordinate space activities and their related sectors within a framework of internationally agreed regulations.

Actions to be taken (approx. 100 words):

- Establish a set of regulations to co-ordinate space activities
 - Prepare guidelines for space activities and involved sectors to meet minimum regulatory requirements
 - Decide on safety standards to be applied in space activities and related sectors
 - Design a space traffic co-ordination system
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Presenter: G. Asli Sezer