

Thank you Mr. Chairman, distinguished delegates,

let me briefly give you an overview about my presentation today. First, I'll give a short introduction about the Space Generation Advisory Council, it's work especially in respect to the United Nations. This will be followed by our view on space and leading towards addressing the key issues we identified concerning space security, including opportunities and challenges we see, and I will conclude with some recommendations.

The Space Generation Advisory Council (SGAC) is a non-governmental organisation (NGO) and a network for students and young professionals interested in space. We have a permanent observer status at the United Nations Committee on the Peaceful Uses of Outer Space (UN COPUOS) and represent the views of youth on space matters. We are honored and thankful to have the privilege to speak here at this conference about the younger generation's perspective on space security.

Let me now give you a short introduction of the organisation. The idea of having a global network of youth on space issues is already over 20 years old. But it was not until UNISPACE III, the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space in 1999 when the UN recommended in the Vienna Declaration on Space and Human Development that a youth advisory council to be set up to give youth input to the UN on space matters. Thus the Space Generation Advisory Council in support of the United Nations Programme on Space Applications - our full name - was founded. Initially run fully by volunteers we do have two paid employees now. One of those, our Executive Officer is located in Vienna, sharing an office with the European Space Policy Institute (ESPI), to allow close contact with UN COPUOS and the United Nations Office for Outer Space Affairs (UN OOSA) and other entities.

Further, SGAC participates and contributes to UN Workshops mainly in developing countries through our global membership base as well as presents youth issues at several conferences and symposia. We co-organized several conferences such as "The Conference of NGOs in Consultative Relationship with the United Nations (CONGO) - Outer Space Forum". We have working relations with the United Nations Educational, Scientific and Cultural Organization (UNESCO) relating to education and outreach programs. Furthermore, SGAC makes regular statements and technical presentations during the COPUOS Subcommittee Meetings as well as the general session in order to represent the views and opinions of global youth to the UN. We are also involved in several Action Teams that were set up out of the recommendations in the Vienna Declaration on Space and Human Development, as well as some of the resulting Working Groups.

During the foundation of the Space Generation Advisory Council the Declaration of the Space Generation was written to express our visions on space as we are its future stakeholders. Allow me to quote:

- "We, the Space Generation, representing the worldwide visions of youth, commit ourselves to ensure the future of humankind."

- "In leaving the Earth's cradle, in the quest for understanding our place in the Universe, we are entrusted by the next generations with the sustainable development of the planet for our peaceful future."

- "We, the Space Generation, regardless of culture, language and creed must ensure that space exploration will improve the quality of life for the benefit of all humankind."

- "We express the hope and the conviction that our common future ought to proceed *ethically*, with an *understanding* of the long-term consequences of our actions, and with *all of humanity* walking

forward together as one.”

Further in 2003, SGAC set the following aim in its strategy document: “Advancing human development through the peaceful uses of outer space”.

Since 2007 we have been actively collecting contributions towards the formulation of a multi-disciplinary vision of the youth for the next 50 years of space activities. Our members coming from all kinds of backgrounds and regions agreed on within the following three themes:

- Ensuring the Survival Interests of Humanity
- Space for the Benefit of all humanity and of our environment
- Advancing the Frontiers of Science and Technology

In particular context the recommendations of Theme 1 call for space governance mechanisms such as international space laws that can help ensure the peaceful and sustainable use of space. These visions were drawn into a roadmap. The vertical axis shows the number of years into the future while the horizontal axis is divided into different categories, like Moon, Mars, Private etc. The blue arrow to the right depicts the Policy branch of the 50 year roadmap as our members see it. Free workforce flow basically addresses the wish to encourage an exchange in expertise and knowledge. This is followed by resource sharing. Resources in this context are space itself and its resources. Space Traffic Management and conflict avoidance conclude the outlook.

The bottom line is that SGAC visions and recommendations have consistently pushed for developing space in a way that safeguards space for all of humanity. Safeguarding space means to ensure the long-term viability of all humanity to use space for peaceful purposes. The consequences of that are, that space should be kept free from any activities that:

- are against the spirit of the peaceful purposes enshrined in the Outer Space Treaty
- inhibit the use of space by other actors
- in any other way destroy the finite resources or usability of the space environment

Mr. Chairman, ladies and gentlemen - When contemplating space security for the future generation in general and in particular through the 50 year vision roadmap, SGAC has identified four key issues that need to be addressed in the short term future to provide long term security.

The first issue is space debris. SGAC is very concerned about rising numbers of space debris as it represents an increasing hazard to spacecraft and astronauts. The greatest threat are fragmentation events due to exploding spent rocket stages or debris caused by collisions among debris as they potentially create exponentially more debris. In the long run this will inhibit the sustainable access to space and its use as a resource for all parties to explore and utilize space in a peaceful way for many generations to come. Essential for a long term solution is an effective mitigation strategy. Within UN COPUOS Debris Mitigation Guidelines were suggested and adopted by the member states. However these guidelines are voluntary and not legally binding. Closely linked with the mitigation of space debris is the surveillance capability. A greater resolution is needed to track the objects that have the potential to disable a spacecraft, namely all objects larger than 1 cm, while currently only objects larger than 10 cm can be tracked in Low Earth Orbit. Greater resolution would be necessary to complement the mitigation guidelines to provide a long term solution for space debris. Further, international cooperation to share relevant data would be beneficial to all actors involved.

Secondly, Space Traffic Management is a logical step from space debris mitigation as it would also allow a comprehensible collision avoidance structure. While currently not much can be done about

debris-debris collisions, active spacecraft are able to do collision avoidance maneuvers with just small amounts of fuel if an impending impact is predicted in time. With ever increasing numbers of space actors as well as objects in Earth orbit, Space Traffic Management is a logical consequence, not only to avoid collisions but also to guarantee for all humankind an unimpeded and more efficient use of space resources – the question is not if, but when it will be implemented. It must be clear to all space actors that having a space traffic management system in place will allow to reduce the loss of working satellites, sustain the use of space resources, and provide an asset to the security of space for the coming years.

Thirdly. While not immediately related to space security in the short term, further clarifications within the space law regime are needed to solve issues that will arise in the long-term as there is a general lack of basic laws of space conduct. In the future we might see conflict over land and resources off Earth, not necessarily solely among states but possibly involving commercial and private companies as well. The young generation strongly supports initiatives that aim at an accelerated development of space technologies within the private and commercial sector for the peaceful uses of outer space for all humanity, such as the Google Lunar X-Prize, which offers up to \$30 million to the first team that can land a privately build rover before the end of 2014 on the Moon and send back high resolution video. However, initiatives like this will eventually lead to a larger number of non-state space actors. Resulting from that, even if the technology was invented in a peaceful environment for peaceful purposes, it cannot be ruled out and it appears rather likely that certain issues related to security might arise in an environment that is not sufficiently legally covered and thus should be dealt with in time. This, as an example for other new advances, was not perceived 40 years ago when the first Space Treaties were drafted and they need to be addressed in a civilized manner within international space law to ensure sustainable access to space and utilization of it and its resources for all humanity.

The final key point is conflict avoidance. Space weapons and aggressive acts, like Anti-Satellite (ASAT) activities should be prohibited. Space weapons due to their negative influence on the space security situation and ASATs as their use creates large amounts of space debris. As mentioned earlier, space debris is a serious concern as it might prohibit future generations to access and utilize space in a sustainable manner. Kinetic ASATs are therefore threatening everything our generation wants to do in the space environment. The recent ASAT Tests conducted within the last 15 months triggered an intense reaction amongst the young generation who were and still are very concerned about these recent developments as the Executive Council of the Space Generation Advisory Council could observe through the discussions happening on our member email discussion list. It even led to the establishment of a working group by concerned youth and continues to be discussed and carefully analysed by them. The results of their findings will be presented at a later opportunity.

Mr. Chairman - Summarizing, these are very generic issues, as you can see by the presentation titles of my fellow speakers today and tomorrow. Deriving from the above mentioned points, SGAC recommends the following:

- create a treaty through UN COPUOS to make space debris mitigation legally binding and increase resolution of surveillance capabilities and encourage the sharing of relevant data.
- Initiate a working group on space traffic management as well as address a framework for rules of the road possibly through an Inter-Agency Space Debris Coordination Committee (IADC) Working Group and then further to COPUOS
- avoid conflict - prohibit weapons and aggressive acts from space
- address several open issues regarding space governance (lunar governance and property rights)

These issues should be addressed as soon as possible as we cannot afford to wait much longer as

reality will progress beyond the current laws. This would make it difficult to address the issues then.

The Space Generation Advisory Council is already very involved with these issues as they influence our ability to access and utilize space. We have internal working groups on Space Debris, ASATs and STM. Further SGAC was a partner for the Space Security Index and also, while not being directly involved helped initiate the International Space University's Space Traffic Management activities. We are willing and able to discuss and contribute further to the open issues at hand related to space security and we would be interested and glad in providing our advise.

Thank you for your attention.