Permanent
Mission
of Austria

to the United
Nations in Vienna

AUSTRIA, ITEM 6

Report on the Scientific and Technical Subcommittee
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Ambassador Gabriela SELLNER

Chair,

Excellencies – Colleagues,

Ladies and Gentlemen,

Orbits are increasingly congested and contested. They constitute a limited natural resource. At the moment, we experience a dynamic evolution of space activities and the increasing emergence of a near-Earth ecosystem as an economic domain. This ecosystem attracts additional actors and investments, including the commercial sector.

Long Term Sustainability

As the utilization of outer space has become indispensable in many areas, we very much welcome the setting up of the **Working Group on Long Term Sustainability**. We would like to express our deepest gratitude in particular to Pontsho Maruping, skillful moderator of the discussions leading to the nomination of the Chair of the Group. We wish the Chair of the Working Group Mr. Umamaheswaran R. (India) all the best for his important task and can assure him of our full support.

The 21 Guidelines and the preamble constitute a major success. Austria has already started a national process on the implementation of the guidelines. We look forward to presenting and discussing our preliminary observations within the working group as information exchange on the implementation is key. At the same time, we believe that new aspects might come along as progress happens. We therefore support discussions to work further on the topic of long-term sustainability in this Committee and its Subcommittees. In this

regard, we believe that not only scientific and technical questions, but also legal aspects should be addressed. If necessary, we would also welcome intersessional work to move forward.

Space Debris

The increase in space traffic and collision risks challenges the safety of space activities, access to space, and the long-term sustainability of outer space, calling for a comprehensive discussion. Austria with its Space Research Institute (IWF) of the Austrian Academy of Sciences is actively contributing to an increase in the accuracy and the performance of Space Debris Laser Ranging, useful and necessary for avoidance manoeuvres, conjunction warnings or removal missions. In this context, a future **worldwide Space Debris Laser Ranging network** could significantly improve orbital predictions. The "Expert Centre Deployment and Demonstration" of the European Space Agency is currently working in this direction. A future network of many stations around the globe working together will definitely increase accuracy of orbit predictions of space debris.

Space Weather

Austria supports the *Draft Report of the Expert Group on Space Weather: Survey of the State of Member State Preparedness, and Current and Future Activities and Needs for Space Weather Impact Mitigation* (A/AC.105/C.1/2021/CRP.14) submitted to the next STSC for adoption. We support the recommendations expressed there and look forward to the adoption of the report. Concerning the individual recommendations let me inform you that

- *Regarding recommendation 1*: Austria is part of the *International Space Weather Action Teams (iSWAT)* of the *Committee on Space Research COSPAR* (https://www.iswat-cospar.org) and supports the coordination and the global effort of joint Space Weather research.
- *Regarding recommendation 2:* Austria is part of *International Space Environment Service (ISES),* a collaborative network of space weather service-providing organizations around the globe *(http://www.spaceweather.org)* that aims at standardized data and its exchange via common platforms such as VSO (Virtual Solar Observatory). Austria is currently undertaking efforts to better coordinate at national level.
- *Regarding recommendation 4:* Austria is an active member of the Expert Group and also contributed to Opgenoorth's latest study (Opgenoorth et al., 2019

(https://www.swsc-journal.org/articles/swsc/full_html/2019/01/swsc190036/swsc190036.html), providing a model for the coordination of Space Weather activities using the European context as an example. Austria hopes to continue this good work at the global level.

Dark and Quiet Skies

Austria supports the new topic of „*Dark and Quiet Skies for Science and Society*". We welcome that UNOOSA and Spain, jointly with the International Astronomical Union (IAU) is organizing a conference in October this year to deepen the discussion on the recommendations developed so far. We are looking forward to further proposals to the committee to deal with the challenges. A technical presentation was given on "*Skypollution' - How artificial light and satellite networks are impacting our night skies and research*" on 25 August.

Austrian satellites

After 8.5 years, the nanosatellite mission "BRITE Constellation", conducted by Austria, Canada and Poland and dedicated to the measurement of the brightness variations of massive luminous stars is continuing to deliver high-quality science data. This is a remarkable result, as the original lifetime of the design was 2 years. Commercial-off-the-shelf components have been used to fulfill the requirements of a low-cost spacecraft.

The ESA nanosatellite OPS-SAT, developed under the lead of the Technical University Graz was launched in December 2019 and has since been operated by the European Space Operations Center ESOC. Many novel hardware and software experiments have been conducted in the areas of radio and optical communications, on-board autonomy, artificial intelligence, remote sensing and attitude control. A technical presentation on OPS-SAT will be given on 30 September.

RUAG Space Austria, Technical University Graz and Seibersdorf Laboratories are currently developing another satellite. Similar in design to OPS-SAT it will provide an advanced altimeter to survey glaciers and sea waves as well as determining the radiation environment

in the low-earth orbit. This mission called “PRETTY” (Passive Reflectometry and Dosimetry) is expected to contribute to climate research and is planned for launch in 2022.