

**Agenda Item 3**

**General Exchange of Views and Introduction of Reports Submitted on National Activities**

Madam Chair, Distinguished Delegates, Ladies and Gentlemen,

On behalf of the Japanese delegation, I am pleased to address the 56th session of the Scientific and Technical Subcommittee of COPUOS. First of all, I would like to congratulate Ms. Maruping for the success of the Subcommittee last year. I would also like to warmly welcome as new members of the Committee, Federal Democratic Republic of Ethiopia, Republic of Cyprus, Republic of Finland, Republic of Mauritius and Republic of Paraguay.

Madam Chair,

Japan is of the view that the Committee provides a unique and important platform to promote international cooperation in the field of outer space. Together with COPUOS, Japan has been actively engaged in the capacity building of new and diversified spacefaring nations and actors. The new business ideas are emerging, including actions on the space debris. To support and further enhance both new and existing activities, Japan believes a rule of law in outer space is integral for safe, stable and sustainable space activities.

It was regrettable that the compendium of the LTS guidelines were not endorsed by the COPUOS last year after the eight years' discussion at the Working Group. Yet, in front of us, we have a set of 21 voluntary guidelines, which represent the agreed best practices of fellow member states of the COPUOS. In Japan, "Space Activity Act" was enacted in last November, and established a system for permission to launch a vehicle and control of spacecraft and compensation scheme for damage of third party caused by launching a vehicle. Under the supervision, all plans are required to satisfy criteria such as prevention of on-orbit break-up and post-mission disposal, thereby decrease the number of space debris. Japan would like to set an example to implement those guidelines, and, after engaging with some other countries in advance, to encourage all member states to respect and voluntary implement those guidelines.

Increasing number of space debris poses a serious threat to the outer space assets. To ensure the safety, security and sustainability of outer space activities, we shall take a solid step towards the issue of space debris through legal instrument, technical standards and R&D. JAXA is going to make a technical presentation on space debris research including observation, modeling, in-situ measurement of small debris, ADR, ground testing in the morning of Monday 18<sup>th</sup> February. For the sustainable use of outer space environment, Japan will continue to be actively engaged in tackling challenges of space debris and set an example through a series of measures mentioned above. Japan would like to call upon all Member States to make further efforts to mitigate space debris.

Madam Chair,

I would like to take this opportunity to report on Japan's recent space activities. Since the last subcommittee, Japan has conducted spacecraft launches using H-IIA Launch Vehicle No.38, 39 and 40, H-IIB Launch Vehicle No.7 and the fourth Epsilon Launch Vehicle. This includes the launch of the Greenhouse Gas observation satellite, GOSAT-2, and the first innovative satellite technology demonstration program which demonstrates components developed by Japanese companies and universities.

Last year in October, the Mercury Magnetospheric Orbiter (MMO) which was developed by JAXA and is performing observations of magnetic field, Mercury's magnetosphere and exosphere under the BepiColombo project was launched by a single Ariane 5 rocket of European Space Agency (ESA).

Subsequently, in November last year, Quasi-Zenith Satellite System (QZSS) or "MICHIBIKI" has started its service as a four-satellite constellation. Using the data from the constellation of four satellites, the positioning accuracy is highly improved in the Asia-Pacific region. QZSS can be used in an integrated way with GPS, ensuring a sufficient number of satellites for stable, high-precision positioning. QZSS is compatible with GPS and receivers can be procured at a low cost, so it is expected that position information businesses utilizing geographical and spatial information will be developed.

In the area of human spaceflight, Astronaut Norishige Kanai completed the 168-day long duration mission aboard the International Space Station last June. He carried out numerous missions mainly related to medical research by exploiting his background as a doctor for the understanding and treating aging-related symptoms. He was the fourth Japanese astronaut to conduct extravehicular activities, and he was also in charge of the deployment of the first satellite of Kenya under the KiboCUBE program between JAXA and UNOOSA. Also, H-IIB Transfer Vehicle, HTV7 was launched last September, which carried necessary materials for ISS operation including new ISS batteries (with Japan-made Lithium Ion Battery Cells) and experiment equipment from

JAXA, NASA and ESA. In addition, HTV7 successfully demonstrated re-entry technology and cargo recovery function from the ISS by HTV Small Re-entry Capsule.

In 2010, Japan brought back samples from an asteroid “Itokawa” by “Hayabusa” space probe. This was the world’s first sample return mission from an asteroid. As the successor of the mission, Hayabusa2 was launched in December, 2014 and arrived at the C-type asteroid called “Ryugu” in June 2018. In September of the year, the rover carried by Hayabusa 2 called “MINERVA-II1” succeeded in landing on Ryugu and capturing the picture of the surface. This is the world’s first successful rover exploring the surface of the asteroid. In October 2018, the robotic lander also carried by Hayabusa 2 called “MASCOT,” which was developed by DLR and CNES was successfully deployed and landed onto the surface of Ryugu. The information from these two missions were not only beneficial for gaining scientific knowledge about the asteroid but also supporting Hayabusa2 spacecraft to determine the location of the touchdown. Japan is pleased to announce that the historical moment of Hayabusa 2 touchdown operation to catch the sample of the asteroid will start this week. The Hayabusa2 will return to the Earth with the collected sample in 2020.

Madam Chair,

I would now like to touch upon some frameworks of international cooperation. The first is the Asia-Pacific Regional Space Agency Forum (APRSAF), which is an open and flexible cooperative framework in the Asia-Pacific region to enhance space activities and gain socio-economic benefits from space technologies and their applications. The 25th Asia-Pacific Regional Space Agency Forum (APRSAF-25) co-organized by the Singapore Space and Technology Association (SSTA), the Ministry of Education, Culture, Sports, Science and Technology - Japan (MEXT), and the Japan Aerospace Exploration Agency (JAXA) was held from November 6-9, 2018 in Singapore under the theme “Innovative Space Technology for Evolving Needs.” The forum was attended by 385 participants from 29 countries and regions, and nine international organizations, including four heads of space agencies and five deputy heads from Asia-Pacific countries as well as high-level officials from governmental institutions in charge of space policy. Discussions covered a wide range of topics from technology to policy issues, including enhancement of partnership with regional international organizations for the establishment of a new SAFE initiative framework, finalization of a mission concept for co-development of an innovative small satellite, and promotion of the establishment of a policy-level community. Through the forum, participants were able to recognize the importance of further deepening cooperative relationships in the Asia-Pacific region in terms of space.

Japan highly appreciates the efforts of the co-organizer, Singapore Space and

Technology Association (SSTA), and will continue to contribute to the promotion of such regional collaborations. The next APRSAF-26 will be held in Japan at the end of November 2019, and will be co-organized by MEXT and JAXA.

I would like to introduce the results of the 2nd International Space Exploration Forum, so called ISEF2, which was hosted by the Government of Japan on 3rd March of last year in Tokyo. In this opportunity, I would like to express my deep appreciation to great supports from many countries and organizations for this forum. At the ISEF2, with participation of ministers and head of space agencies from 45 countries and international/inter-governmental organizations, three outcome documents were agreed. Through the ISEF2 meeting, participating countries shared the common recognition about international space exploration such as “Peaceful purpose & benefits for humankind,” “Promotion of international cooperation and collaboration,” and “Sustaining outer space environment.” These documents are also mentioned in the report for the UNISPACE+50 Thematic Priority 1, “Global partnership in space exploration and innovation.” The representatives from Italy and the European Commission announced that the next ISEF would be hosted in Europe by 2021. We, as the host of the ISEF2, are happy to cooperate in the preparation of the next ISEF.

Based on the outcomes of the ISEF2, I expect international space exploration is promoted with an open system where any country can participate according to its own interests and capabilities. Japan will proceed coordination with international partners to give shape to international program aiming toward the moon as the current target.

Last but not least, the KiboCUBE. KiboCUBE offers an educational or research institution from emerging UN members the opportunity to deploy a cube satellite, a CubeSat, of which the institution develops and manufactures, from the International Space Station, ISS, Japanese Experiment Module, Kibo. The program started in September 2015 as a dedicated collaboration between the UNOOSA and JAXA, utilizing the ISS for the world. As the first country to benefit from this programme and the first Kenyan satellite has been successfully deployed on May 11th last year. Japan is also convinced that this experience benefits the space capacity of Kenya, while positively evolving the society as a whole.

Finally I would like to take this opportunity to invite all delegates to a side event on capacity building during the lunch break of February 15<sup>th</sup> organized by Japan, UNOOSA, and Kenya. During the event, we would like to introduce two initiatives, the KiboCUBE and UN/Japan Nano Satellite Technologies Fellowship Program as examples. The side event will be followed by a reception at the coffee corner near the Board Room D.

A technical presentation on Japan's contribution to disaster management in Asia will be made in the afternoon of Wednesday 20<sup>th</sup> February. Another technical presentation of Senior Advisor and Astronaut, Dr. Chiaki Mukai, in the morning of Friday 15<sup>th</sup> February, is on expanding partnerships in space exploration and developing technology for space habitation and its application to the earth.

Madam Chair,

I will end my statement by reiterating that Japan will continue to cooperate for the peaceful exploration and use of outer space in close cooperation with COPUOS.

Thank you for your attention.