

Japan

Information on the mandate and purpose of the Working Group on Legal Aspects of Space Resource Activities under the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space

The Government of Japan presents its compliments to the United Nations Office for Outer Space Affairs, the Chair and Vice-Chair of the Working Group on Legal Aspects of Space Resource Activities and has the honor to provide Japan's position in response to the INVITATION CIRCULAR (OOSA/2022/40, CU 2022/197), dated 1 July 2022, which requests Member States to provide information of the mandate and purpose of the Working Group.

1 The type of space resources that fall within the mandate and scope of the Working Group

Under Japan's Act on the Promotion of Business Activities for the Exploration and Development of Space Resources (Act No. 83 of 2021) (hereinafter "the Space Resources Act"), "space resources" means water, minerals and other natural resources that exist in outer space, including the Moon and other celestial bodies.

This is in line with the understanding of "space resources" built (up)/developed/nurtured through multilateral discussions and studies as well as the definitions of the relevant space laws including the above-mentioned. The Government of Japan, therefore, is of the view that it is possible for the mandate and scope of the Working Group to follow this reasonably established understanding.

2 The type of activities that fall within the mandate and scope of the Working Group

Under the Space Resources Act, "exploration and development of space resources" means mining, extraction, other similar activities, related processing(*), storage and transportation of space resources as well as examination of the existence of space resources that contribute to mining, extraction and other similar activities. This is in line with the understanding of activities related to "space resources" built (up)/developed/nurtured through multilateral discussions and studies as well as the definitions of the relevant space laws including the above-mentioned. The Government of Japan, therefore, is of the view that it is possible for the mandate and scope of the

Working Group to follow this reasonably established understanding.

* “related processing” means to process the space resource extracted from a celestial body to a usable form as a resource.

The Space Resources Act does not apply to activities conducted exclusively for scientific research. If this working group includes such activity in its scope, it is important to respect the freedom of scientific investigation in outer space in accordance with Article I of the Outer Space Treaty (hereinafter referred to as “OST”).

3 The type of information to be collected by the Working Group in accordance with its mandate

- National plans, including space agencies, industry plans, and current legal systems (including national laws) related to space resource extraction
- Scientific and technological facts related to space resources

4 The views of States members regarding the existing legal framework for space resource activities

[International law (OST etc.)]

Article I of the OST provides for the freedom of the “exploration and use of outer space, including the Moon and other celestial bodies.” The Government of Japan understands that the exploration, development and use of space resources are included in such freedom, and that such freedom shall be carried out in conformity with the existing rules of international law (Article III of the OST), “with due regard to the corresponding interests of all other States” (Article IX of the OST).

On the other hand, the OST does not have any explicit provisions related to exploration, development and the uses of space resources. Further development of a framework for space resource activities is desirable.

Japan formulated the Space Resources Act with a view to ensuring the accurate and smooth implementation of conventions including the OST, and endeavors to establish internationally harmonized systems on space resources.

[National laws and regulations]

The Space Resources Act passed the Diet on 15 June 2021 (or was promulgated on 23

June 2021) and came into effect on 23 December of the same year.

Its provisional Japanese-English translation is available through the link below.

https://www8.cao.go.jp/space/english/resource/documents/act83_2021.pdf

The Space Resources Act provides a national authorization system, rules for the acquisition of ownership of space resources and other necessary provisions, in order to ensure the accurate and smooth implementation of conventions concerning the development and use of outer space including the OST, and to promote business activities for the exploration and development of space resources by private business operators.

An overview of the Space Resources Act is as follows:

- Submission of business activity plans for the exploration and development of space resources and licensing by the government
- Public announcement of licensed business activity plans
- Acquisition of ownership of space resources mined in accordance with the licensed business activity plan
- Sincere implementation of international agreements
- Establishment of international harmonized systems and ensuring international coordination

[*Refer to Annex 1 for the details of the Space Resources Act.](#)

[Others (political commitment)]

In October 2020, Japan signed the Artemis Accords as a political commitment to establish a set of principles for the exploration and use of outer space by civil space agencies.

5 The current practices and challenges in the implementation of the existing legal framework for such activities.

[Practices]

- Under the Space Resources Act as mentioned above, Japan issued the first license to “ispace inc.” (a Japanese space start-up) on 4 November 2022 (license number spacecraft -22-019) and made its business development plan public on the Cabinet Office website. The link is as follows:

<https://www8.cao.go.jp/space/english/resource/application.html>

[Challenges]

- Ensuring all States execute activities related to space resources in support of safe and sustainable space activities.
- Implementation of measures necessary to ensure international coordination, including the establishment of internationally harmonized systems related to the exploration and development of space resources, promotion of information sharing among countries, and other measures for international coordination.

6 The benefits and challenges to the development of a framework for such activities.

[Benefits]

- Building an appropriate framework would contribute to creating a basis for safe, sustainable, rational and peaceful activities related to space resources.
- It would contribute to fostering a common understanding about ownership of space resources, and promote safe, sustainable, rational and peaceful activities related to space resources.

[Challenges]

- Building an appropriate framework which ensures the safe, sustainable, rational and peaceful exploration and development of space resources in compliance with the OST.
- Appropriate rule-making, with respect to the scientific and technical development and current practices, taking into account their innovative and evolving nature.

7 The relevant factors for the development of a set of initial recommended principles for such activities.

To ensure that all activities related to space resources are executed in support of safe and sustainable space activities,

- Definition of space resources and exploration and development of space resources
- Ownership of space resources
- Information sharing
- Measures for international coordination
- Dispute settlement

8 The format, agenda, topics and other details of the dedicated conference (currently) scheduled for 2024.

- The future visions of exploration and development of space resources

9 Any other background or information paper, or any other views, that States members may wish to share.

The Government of Japan requires license, and appropriately authorizes and continuously supervises the exploration and development of space resources in accordance with its national law. By doing so, the Government aims to realize sustainable development of space resources and contributes to preventing disputes.

“ispace inc.” (a Japanese space start-up) submitted a business activity plan for Mission1 to the Cabinet Office in conjunction with an application for “license for the exploration and development of space resources” under the Space Activities Act. The license was granted on 4 November 2022. The Business Activity Plan of “ispace inc.” is published on the website of Cabinet Office of Japan. The link is as follows:

<https://www8.cao.go.jp/space/english/resource/application.html>

The duration of the project activities related to the exploration and development of space resources in this mission is scheduled for the first half of 2023, and its length is for approximately 14 days after the lunar landing.

[*Refer to Annex 2 for the plan of ispace’s project.](#)

Annex 1 An overview of the Space Resources Act.

(Licenses)

A person who intends to obtain a license for the purpose of the exploration and development of space resources must state, in application forms, a business activities plan in which the contents of business activities, such as the purpose, period, place and methods of exploration and development, are specified:

The Prime Minister must not grant a license related to the exploration and development of space resources unless Prime Minister determines that the application conforms to all of the following items:

- (i) The business activity plan is in compliance with the basic principles of the Basic Space Act and is not likely to cause any adverse effect on the accurate and smooth implementation of the conventions on development and use of outer space and the ensuring of public safety; and
- (ii) The applicant has sufficient ability to execute the business activity plan.

(Public Announcement)

The Prime Minister, when a license etc. for the exploration and development of space resources has been granted to promote business activities related to the exploration and development of space resources under international cooperation and contribute to the prevention of disputes related to the exploration and development of space resources, shall give public notice thereof etc. without delay via the Internet or by other appropriate means.

(Acquisition of Ownership of Space Resources)

A person who conducts business activities related to the exploration and development of space resources shall acquire the ownership of space resources that have been mined, etc. in accordance with the business activity plan pertaining to the license etc. for the exploration and development of space resources, by possessing the said space resources with the intention to own.

(Sincere Implementation of International Agreements, etc.)

In the enforcement of this Act, attention shall be paid not to hinder the sincere implementation of treaties and other international agreements Japan has concluded.

No provision of this Act shall unjustly harm the interests of other States exercising freedom of the exploration and use of outer space, including the Moon and other celestial

bodies.

(Establishment of International Systems and Securing Coordination, etc.)

The National Government shall endeavor to establish internationally harmonized systems on the exploration and development of space resources in collaboration with foreign governments by cooperating with international organizations and other international frameworks.

The National Government shall take necessary measures to ensure the advancement of international information sharing, measures for international coordination and other international alignment with regard to business activities by private businesses related to the exploration and development of space resources.

The National Government is to pay due consideration for the sound development of industries and the strengthening of international competitiveness related to the exploration and development of space resources.

Annex 2 The Business Activity Plan of “ispace inc.”

The period of the business activities related to the exploration and development of space resources in this mission is scheduled for the first half of 2023, and its length is about 14 days after the lunar landing.

The plan is to land within a radius of about 4 km from the following planned landing sites.

【Scheduled landing point】

(i) Point name: Mare Frigoris (Atlas Crater) (main scheduled landing point)

Latitude and longitude : 47.5 degrees north latitude, 44.4 degrees east longitude

(ii) Point name: Lacus Somniorum (backup 1)

Latitude and longitude: 38.9 degrees north latitude, 33.8 degrees east longitude

(iii) Point name: Sinus Iridium (backup 2)

Latitude and longitude: 46.9 degrees north latitude, 27.5 degrees west longitude

(iv) Point name: Oceanus Procellarum (backup 3)

Latitude and longitude: 42.0 degrees north latitude, 48.4 degrees west longitude

In the business activities, the spacecraft will be landed at the aforementioned candidate landing site and regolith will be collected. Specifically, we expect that the regolith scattered by the injection from the spacecraft propulsion system passively accumulates on the footpads attached to the landing leg tips of the spacecraft, when the spacecraft lands on the moon and when disposing of the remaining propellant after landing on the moon.

The spacecraft is equipped with four footpads to absorb shock from the lunar surface during landing. Each footpad is placed at a certain distance from the propulsion equipment on board the spacecraft.

Collecting of space resources in this business activity is carried out by depositing regolith on the footpad as explained above.

The regolith deposited on the footpad is photographed by the camera mounted on the spacecraft. ispace confirms the existence of deposited regolith by photographed images, and conducts a commercial transaction to transfer the ownership of the regolith from ispace to NASA before implementing the operation termination measure. It does not involve physical delivery during operation.