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English only

Committee on the Peaceful Uses of Outer Space
Legal Subcommittee
Sixty-first session
Vienna, 28 March –8 April 2022
Item 6 of the provisional agenda*
Status and application of the five United Nations treaties on outer space

Questionnaire on the application of international law to small-satellite activities

Note by the Secretariat

At the sixtieth session of the Legal Subcommittee, in 2021, the Working Group on the Status and Application of the Five United Nations Treaties on Outer Space agreed (A/AC.105/1243, annex I, para. 11) that States members and permanent observers of the Committee should continue to be invited to provide comments and responses to the "Questionnaire on the application of international law to small-satellite activities" (A/AC.105/1243, annex I, appendix II).

The present conference room paper contains replies received from Chile, Japan and Morocco.

* A/AC.105/C.2/L.319.

Chile

[Original: Spanish][1]
[18 February 2020]

1. Overview of small-satellite activities

1.1 Are small satellites serving the needs of your society? Has your country determined whether small satellites could serve an identified technological or development need?

Yes. Chile has determined, in the National Space Policy 2014–2020 and the Defence White Paper 2017, that small-satellite activities contribute to national development, serve the interests of the State, bring benefits in the various areas of national activity and are of strategic importance.[2]

1.2 Is your country involved in small-satellite activities such as designing, manufacturing, launching and operating? If so, please list projects, as appropriate. If not, are there future plans to do so?

Our country operates the small satellite FASat-Charlie, which is currently in outer space and is operated by the Chilean Air Force. Another national activity is the SUCHAI project, SUCHAI being the first artificial satellite designed and developed by the University of Chile for aerospace research.

In addition, SNSAT, a national programme aimed at – inter alia – increasing the country's capacity to manufacture nano- and microsatellites and their respective payloads, will be launched this year.

1.3 Which kind of entity in your country is carrying out small-satellite activities?

At present, the Chilean Air Force, and a number of universities, including the University of Chile and, in the near future, the Universidad de Concepción and the Universidad Mayor.

1.4 Is there a focal point in your country responsible for coordinating small-satellite activities as part of your national space activities?

Yes, the Directorate for International and Human Security of the Ministry of Foreign Affairs, which is responsible for registration, and the Council of Ministers for Space Development, which is responsible for promoting, coordinating and disseminating information on space activities. The Ministry of Defence, through the Chilean Air Force, provides assistance in the exploitation and development of space capabilities within the scope of its functions and areas of competence. In the future, the Ministry is expected to coordinate the activities of the small satellites for which it is responsible.

1.5 Are small-satellite activities carried out in the framework of international cooperation agreements? If so, what type of provisions specific to small-satellite activities are included in such cooperation agreements?

Although the Chilean Air Force is not currently a party to any specific international agreements on space operations and the processing of space information, the country's satellite activities are carried out in accordance with international law and the principle of international cooperation as established in space law.

[1] The replies from Chile were originally made available in Spanish only in conference room paper A/AC.105/C.2/2021/CRP.24.

[2] Decree No. 181/2016 of the Ministry of Transport and Communications.

2. Licensing and authorization

2. Do you have a legal or regulatory framework to supervise any aspect of small-satellite activities in your country? If so, are they general acts or specific rules?

No, Chile does not have such a framework.

3. Responsibility and liability

3.1 Are there new challenges for responsibility and liability in view of small-satellite activities?

Yes – the increased number of unregistered satellites, which, when they reach the end of their service life, become space debris and as such could jeopardize the interests of other States.

3.2 How are liability and insurance requirements enforced on an operator in your country, for a small satellite under your country's responsibility, in the event that "damage" occurs on the surface of Earth, to aircraft in flight or to another space object in orbit?

No information available.

4. Launching State and liability

4.1 Since small satellites are not always deployed into orbit with dedicated rockets as in the case of larger satellites, there is a need for clarification in the understanding of the definition of "launch". When a launch of a small satellite requires two steps – first, launching from a site to an orbit and, second, deploying the small satellite to another orbit – in your view, would the first step be regarded as the "launch" within the meaning of the United Nations treaties on outer space?

Any activity carried out by humans, either independently or through the use of existing technologies, with the intention of placing a satellite in orbit in outer space, should be covered by the concept of "launch".

4.2 Do you think that the current international regulatory regime is sufficient to regulate operators of small satellites or that there should be a new or different international regulatory approach to address operations of small satellites?

The current approach is sufficient, but the process of codifying space law should be a continuous one.

5. Registration

5. Does your country have a practice of registering small satellites? If so, does your country have a practice of updating the status of small satellites? Is there any legislation or regulation in your country that requires non-governmental entities to submit to the Government information for the purpose of registration, including updating of the status of small satellites they operate?

Chile is a signatory to the five space treaties and complies with the registration requirements through the Ministry of Foreign Affairs.

6. Space debris mitigation in the context of small-satellite activities

6. How has your country incorporated specific requirements or guidelines into its national regulatory framework to take into account space debris mitigation?

The Chilean Air Force has developed a protocol for deorbiting and controlled re-entry for its FASat-Charlie satellite system.

Japan

[Original: English]
[18 February 2022]

1. Overview of small-satellite activities

1.1 Are small satellites serving the needs of your society? Has your country determined whether small satellites could serve an identified technological or development need?

Based on the Basic Plan on Space Policy of Japan, small satellites are expected to bring various types of innovation in the field of space, such as an increase in remote sensing observation through the utilization of small satellite constellations. However, Japan also recognizes the growing risks to the sustainable and stable use of outer space related to small satellite activities such as the congestion of space orbits.

1.2 Is your country involved in small-satellite activities such as designing, manufacturing, launching and operating? If so, please list projects, as appropriate. If not, are there future plans to do so?

Japan is involved in small-satellite activities. Some examples of its projects are as follows:

(1) United Nations/Japan Cooperation Programme on CubeSat Deployment from the International Space Station (ISS) Japanese Experiment Module (Kibo) “KiboCUBE” implemented by the Office for Outer Space Affairs and JAXA;

(2) United Nations/Japan Long-term Fellowship Programme “Post-graduate study on Nano-Satellite Technologies (PNST)” by the Office for Outer Space Affairs and the Kyushu Institute of Technology;

(3) “Joint Global Multi Nation BIRDS Satellite Project” by the Kyushu Institute of Technology.

1.3 Which kind of entity in your country is carrying out small-satellite activities?

In Japan, there are various players in the field of small-satellite activities, including our space agency, academia, and industry.

1.4 Is there a focal point in your country responsible for coordinating small-satellite activities as part of your national space activities?

There is no specific focal point.

1.5 Are small-satellite activities carried out in the framework of international cooperation agreements? If so, what type of provisions specific to small-satellite activities are included in such cooperation agreements?

One example of international cooperation related to small-satellite activities is the KiboCUBE programme, which is implemented by the Office for Outer Space Affairs and JAXA. The cooperative arrangement of the KiboCUBE programme was formulated in September 2015 between the Office for Outer Space Affairs and JAXA. This programme provides educational or research institutions of developing countries with opportunities to deploy CubeSats from the ISS/Kibo, which they develop, manufacture and operate.

After the selection process of KiboCUBE, the selected entity needs to formulate an arrangement with JAXA consistent with the terms and conditions agreed between the Office for Outer Space Affairs and JAXA.

Based upon this arrangement between a selected entity and JAXA, the selected entity is required to:

(1) Comply with any relevant treaties, including the Outer Space Treaty, Registration Convention, Liability Convention, etc., if the State in which the selected entity is located ratified these treaties.

(2) Comply with any relevant United Nations General Assembly (UNGA) Resolutions relating to peaceful uses of outer space, including:

- UNGA Resolution 1962 (XVIII) “Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space”, as of 13 December 1963

- UNGA Resolution 1721 (XVI) as of 20 December 1961, etc.

(3) Take necessary measures to register the space object and furnish information to the United Nations Secretary-General, in accordance with the Registration Convention if ratified, or in accordance with UNGA Resolution 1721 (XVI).

(4) Bear responsibility for any loss or damage caused elsewhere by the CubeSat after deployment from Kibo, and exclude JAXA and the Government of Japan from any claims arising from such loss or damage.

(5) Abide by JAXA’s safety assurance requirements specified in “JEM Payload Accommodation Handbook”, including the JAXA Space Debris Mitigation Standard, etc.

(6) Comply with the Office for Outer Space Affairs document “Guidance on Space Object Registration and Frequency Management for Small and Very Small Satellites”.

2. Licensing and authorization

2. Do you have a legal or regulatory framework to supervise any aspect of small-satellite activities in your country? If so, are they general acts or specific rules?

A person or entity which intends to launch and operate a small satellite needs to obtain a licence in accordance with the Act on Launching of Spacecraft, etc. and Control of Spacecraft. A person or entity which intends to use high resolution satellite remote sensing instruments or handle remote sensing data from a small satellite needs to obtain a licence and certification in accordance with the Act on Ensuring Appropriate Handling of Satellite Remote Sensing Data.

3. Responsibility and liability

3.1 Are there new challenges for responsibility and liability in view of small-satellite activities?

Japan recognizes the growing risks to the sustainable and stable use of outer space related to small satellite activities such as the congestion of space orbits.

3.2 How are liability and insurance requirements enforced on an operator in your country, for a small satellite under your country’s responsibility, in the event that “damage” occurs on the surface of Earth, to aircraft in flight or to another space object in orbit?

The compensation scheme for damage to a third party is defined in the Act on Launching of Spacecraft, etc. and Control of Spacecraft.

4. Launching State and liability

4.1 Since small satellites are not always deployed into orbit with dedicated rockets as in the case of larger satellites, there is a need for clarification in the understanding of the definition of "launch". When a launch of a small satellite requires two steps – first, launching from a site to an orbit and, second, deploying the small satellite to another orbit – in your view, would the first step be regarded as the "launch" within the meaning of the United Nations treaties on outer space?

Japan has deployed a number of small satellites from the ISS/Kibo module, and JAXA concludes a contract with the person or entity that intends to launch and deploy such small satellites. In this contract, the responsibility of registering the space object and for any loss or damage caused by the small satellite after its deployment is imposed on the person or entity that intends to launch and deploy the small satellite.

4.2 Do you think that the current international regulatory regime is sufficient to regulate operators of small satellites or that there should be a new or different international regulatory approach to address operations of small satellites?

Japan is managing the launch and deployment of small satellites within the current regulatory framework.

5. Registration

5. Does your country have a practice of registering small satellites? If so, does your country have a practice of updating the status of small satellites? Is there any legislation or regulation in your country that requires non-governmental entities to submit to the Government information for the purpose of registration, including updating of the status of small satellites they operate?

In accordance with the Manual Pertaining to the Notification for Registering Space Objects, which was established in November 2018, a person or entity (including non-governmental entities) that intends to launch space objects will submit the information of their space objects to the Government. The information includes updates on the status of small satellites.

6. Space debris mitigation in the context of small-satellite activities

6. How has your country incorporated specific requirements or guidelines into its national regulatory framework to take into account space debris mitigation?

The Act on Launching of Spacecraft, etc. and Control of Spacecraft refers to space debris mitigation measures, which are specified in the licence requirements for control of spacecraft. Detailed contents are specified in the "Guidelines on License Related to Control of Spacecraft", which refer to domestic and foreign standards.

Morocco

[Original: French]
[21 January 2022]

Small satellites represent a technological development that offers many advantages with respect to the use and exploitation of outer space, especially for developing countries. However, the development of small satellites poses a challenge in terms of the regulatory aspects of space activities and is worth including on the agenda of the Committee on the Peaceful Uses of Outer Space so that further consideration can be given to the legal issues concerning such space objects.