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English and Spanish

**Committee on the Peaceful
Uses of Outer Space**

Legal Subcommittee

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Item 5 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 its fifty-eighth session, in 2019, the Working Group of the Legal Subcommittee on the Status and Application of the Five United Nations Treaties of Outer Space agreed (A/AC.105/1203, Annex I, para.12) 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.105/1203, Annex I, Appendix II).

The present conference room paper contains replies received from Chile, Morocco, Nicaragua and the Philippines to the questionnaire.

* A/AC.105/C.2/L.317.



Chile

[Original: Spanish]

English translation will be provided and made available as a separate document in due course.

[Received on 18 February 2020]

Questionnaire on the application of international law to small satellite activities

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?

Si. El Estado de Chile, ha determinado en la Política Nacional Espacial 2014-2020 y el Libro de la Defensa 2017, que la actividad satelital de los satélites pequeños es de utilidad para el desarrollo nacional, de interés del Estado y de beneficio para las distintas áreas de la actividad nacional, siendo además de importancia estratégica.¹

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?

Nuestro país opera el satélite pequeño FASat-Charlie, vigente en el espacio ultraterrestre, operado por la Fuerza Aérea de Chile. Otra actividad nacional es el Proyecto SUCHAI, primer satélite artificial diseñado y desarrollado por la Universidad de Chile para la Investigación Aeroespacial. Asimismo, a contar de este año se dará inicio a un programa nacional llamado SNSAT, el cual busca en uno de sus ámbitos que el país desarrolle la capacidad para fabricar nano y microsátélites, así como sus respectivas cargas útiles.

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

En la actualidad, la Fuerza Aérea de Chile, y algunas Universidades como la Universidad de Chile y próximamente la Universidad de Concepción y la 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?

Sí, la Dirección de Seguridad Internacional y Humana del Ministerio de Relaciones Exteriores, en materia de registro. Respecto a la promoción, difusión y coordinación de actividades espaciales, la función recae sobre el Consejo de Ministros para el Desarrollo Espacial. Asiste esta función el Ministerio de Defensa en materias de empleo y desarrollo de capacidades espaciales dentro de las funciones y áreas de misión que le competen, a través de la Fuerza Aérea de Chile, prospectando en el futuro la coordinación de las actividades de satélites pequeños que estén bajo su responsabilidad.

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?

Las actividades satelitales de Chile se realizan ajustadas a las normas del Derecho Internacional y el Principio de Cooperación Internacional, vigente en el Corpus Iuris Espacial, a pesar de que en la actualidad y en materia de operación y procesamiento

¹ Decreto 181/2016 del Ministerio de Transportes y Comunicaciones.

de información espacial, la Fuerza Aérea de Chile no es parte de un acuerdo internacional específico sobre la materia.

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 existe.

3. Responsibility and liability

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

Existe dificultad relativa al incremento de ingenios satelitales sin registro y al dejar de prestar vida útil, se transforman en basura espacial y que, en esta calidad, potencialmente pudieran generar daños a los intereses de terceros Estados.

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 air craft in flight or to another space object in orbit?

No registramos información.

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?

Se estima necesario incluir dentro del concepto de lanzamiento, aquella realidad inherentemente realizada por el ser humano, se de forma autónoma o por medio del uso de tecnologías existentes, cuya intencionalidad final, sea el emplazamiento de un objeto satelital en órbita ultraterrestre.

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?

Se estima que el enfoque es el adecuado, pero el proceso de codificación del derecho del espacio debiera ser continuo.

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 es signatario de los cinco tratados del espacio y cumple con la normativa de registro, a través del Ministerio de Relaciones Exteriores.

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?

La Fuerza Aérea de Chile elaboró un Protocolo de Desorbitación y Reingreso Controlado de su sistema satelital FASat-Charlie.

Morocco

[Original: French]
[Received on 7 April 2021]

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?

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 presents significant issues and challenges in terms of the regulatory aspects of space activities and is worth including on the COPUOS agenda so that further consideration can be given to the legal aspects of such space objects.

Nicaragua

[Original: Spanish]
[Received on 8 March 2021]

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?

The Republic of Nicaragua has not implemented any projects involving small satellites. However, if a project involving small satellites were to be developed in the future to serve technological or development needs, it would be focused on serving the needs of society as a whole.

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?

Although Nicaragua has neither carried out, nor is currently carrying out, any small-satellite activities, it has not ruled out the possibility of engaging in such activities in accordance with the international legal instruments to which it is a State party.

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

Not applicable.

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

The National Secretariat for Affairs Relating to Outer Space, the Moon and Other Celestial Bodies was established through Act No. 1064. It is the body responsible for coordinating, formulating and promoting national space activities, in accordance with the relevant international treaties to which Nicaragua is a State party.

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?

Not applicable.

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?

Nicaragua has a legal framework that regulates satellite communications services in general. The framework primarily comprises Act No. 200, “General Act on Telecommunications and Postal Services”; the implementing regulations for the Act establishing the Nicaraguan Institute of Telecommunications and Postal Services (TELCOR) – the regulatory body; and Administrative Agreement No. 02-97, “Regulations on Satellite Communications”, issued by TELCOR. Nicaragua, as a member of the International Telecommunication Union (ITU), also implements the relevant ITU Radiocommunication Sector Recommendations.

3. Responsibility and liability

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

Not applicable.

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 air craft in flight or to another space object in orbit?

Nicaragua does not have any small-satellite operators.

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?

Nicaragua understands the term “launch”, as defined by the United Nations treaties on outer space, to be applicable to small satellites, since the first step refers to launch from a site to an orbit. Article 1 (a) of the Convention on Registration of Objects Launched into Outer Space states that “The term ‘launching State’ means: (i) a State which launches or procures the launching of a space object; (ii) a State from whose territory or facility a space object is launched”.

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?

Nicaragua is of the view that in order to determine whether the current international regulatory regime is sufficient or a new international regulatory approach should be applied, the Office for Outer Space Affairs should gather feedback on the operation of small satellites.

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?

Since Nicaragua does not carry out small-satellite activities, it has not registered any satellites. However, Nicaragua follows the procedures established for orbiting satellite networks and public and private Earth stations, as well as assuming the related regulatory responsibilities, in compliance with the Radio Regulations of ITU, of which Nicaragua is a member.

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?

Nicaragua has not yet incorporated space debris mitigation requirements or guidelines into its national legislation.

Philippines

[Original: English]
[Received on 7 April 2021]

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. Small satellite technologies have helped countries like the Philippines to become an emergent nation in space. It has helped lower the barriers to accessing the space environment to conduct scientific exploration, as well as undertake operational quality Earth observation and measurements for peaceful uses. Moreover, the development and utilization of small satellites have opened and expanded opportunities for building upstream space capabilities and promoting downstream applications. The activities have supported the training of highly skilled personnel in facets of space mission planning, design, assembly, test and operation of satellites and the processing of imagery and other spaceborne data through “learning by doing”. This is the experience so far of the Philippines as it built and operated its four experimental small satellites: two 50kg class microsatellites, Diwata-1 and Diwata-2 and two 1U nano satellites, Maya-1 and Maya-2. Currently the Philippines’ micro and nanosatellites are Earth observation satellites used for remote sensing. Data from these and other commercial small satellites have been used to capture images in response to occurrences of typhoons and other natural disasters; and for environmental and natural resource monitoring that support applications in agriculture, air and water quality monitoring, and mapping geologic hazards such as volcanic activities, among others. In addition, amateur radio units onboard small satellites also support communications that are useful in an archipelagic country such as the Philippines, especially in times of emergencies.

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?

Yes. The Philippine Scientific Earth Observation Microsatellite Program or PHLMicrosat is the Philippine government’s first initiative and attempt in developing the country’s capacity in space science and technology. Implemented from 2014 to

2019, the program led the development and successful launch of the country's first microsattellites: Diwata-1 and Diwata-2, as well as a nanosatellite: Maya-1. The Space Technology and Applications Mastery, Innovation and Advancement or STAMINA4Space Program succeeded the PHL-Microsat program in further advancing the country's know-how and capabilities in small satellite upstream and downstream technologies. STAMINA4Space works toward increasing localization of satellite missions planning, bus and payload R&D, ground operations, and data processing and distribution activities to support endogenous capacity development and foster a local scientific, academic, and industrial base in space science and technology applications. STAMINA4Space oversaw the development of the Philippines' nanosatellites, beginning from Maya-2. Succeeding iterations of the Maya nanosatellites which include Maya-3, Maya-4, Maya-5, and Maya-6 are currently being developed locally in Filipino universities, particularly by Filipino students and faculty members and expanded to other local universities. These nanosatellites are expected to be launched in 2021 and 2022.

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

The Philippine Space Agency (PhilSA), as the national space agency, is a government entity that carries out small satellite activities. Prior to the PhilSA, another government agency, the Department of Science and Technology (DOST), funds capacity building and R&D programs on small satellites. Finally, academic institutions are involved in implementing programs on small satellite technologies and downstream product development. It is expected that academic activities in small satellites will also engage local industry and the private sector collaboration and engagement, as intended by these programs.

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

The Philippine Space Agency (PhilSA), by virtue of the Republic Act no. 11363, serves as the central government agency that addresses all national issues and activities related to space science and technology applications.

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?

Yes. Previous and ongoing small satellite activities in the Philippines are carried out under a framework of international academic cooperation agreement among Philippine government and academic institutions and Japanese universities, for example. Moreover, the small satellites developed through the cooperation are intended to be accessible to other member countries through the Asian Microsatellite Consortium established in November 2016.

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?

Yes. Under the Philippine Space Act, a general act, the Philippine Space Agency is the agency responsible for: (1) Launching, tracking and operating the satellites on behalf of the Philippine Government; and (2) Maintaining a national registry of space objects in accordance with the United Nations Convention on Registration of Objects Launched into Outer Space and other international guidelines. Moreover, Section 23 of the Philippine Space Act provides that in "accordance to the United Nations Convention on Registration of Objects Launched into Outer Space, the PhilSA shall maintain a National Registry of Space Objects which lists all space objects launched under the responsibility of the Philippines as the Launching State. The PhilSA shall furnish the United Nation Office for Outer Space Affairs with information contained

in the National Registry of Space Objects as required under the Registration Convention.”

3. Responsibility and liability

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

Yes. While space is becoming more accessible to the private sector, under the Outer Space Treaty, the State Party to the Treaty that launches or procures the launching of an object into outer space, and each State Party from whose territory or facility an object is launched, shall remain internationally liable for any damage caused by such space object. As such, the proliferation of small-satellite activities increases the magnitude of responsibilities and liabilities of the State Party taking into account the provisions of the Outer Space Treaty, Registration Convention and Liability Convention. Moreover, this international liability underscores the need for local legislation to ensure that States can effectively regulate and monitor small-satellite activities within their countries, whether or not such small-satellite activities are carried out by government or non-government entities.

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 air craft in flight or to another space object in orbit?

The Philippines does not currently have any special laws addressing this matter. As such, for damages caused by small satellites on the surface of the Earth, to aircraft in flight, or to another space object in orbit, the domestic law on torts under the Civil Code shall apply. For insurance requirements against the operator, the provisions under the domestic laws on Insurance Code shall apply.

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?

The Philippines, through PhilSA, is still studying the matter and cannot give a formal position on this at this time.

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?

There should be a new international regulatory approach to address the operations of small satellites. When the five United Nations treaties on outer space were drafted, the operation of small satellites were not yet taken into consideration. However, now that the development of satellite systems has evolved, our current international regulatory regime should keep up with and adjust to the current trends in satellite technology.

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?

Yes, the country practices the registration of small satellites with the Office for Outer Space Affairs under Resolution 62/101 (Recommendations on enhancing the practice of States and international intergovernmental organizations in registering space objects). As for the local legislation or regulation, the Philippine Space Agency is mandated by the Philippine Space Act, to be the authority responsible for: (1) Launching, tracking and operating the satellites on behalf of the Philippine Government; and (2) Maintaining a national registry of space objects in accordance with the United Nations Convention on Registration of Objects Launched into Outer Space and other international guidelines.

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 Philippines does not currently have any laws, guidelines, or regulations regarding space debris mitigation.
