United Nations A/AC.105/C.2/L.318

General Assembly

Distr.: Limited
9 April 2021

Original: English

Committee on the Peaceful Uses of Outer Space
Legal Subcommittee
Sixtieth session
Vienna, 31 May–11 June 2021
Item 7 of the provisional agenda*
National legislation relevant to the peaceful exploration and use of outer space

Report on the status of the national space legislation of countries of the Asia-Pacific Regional Space Agency Forum National Space Legislation Initiative

Working paper submitted by Australia, India, Indonesia, Japan, Malaysia, the Philippines, the Republic of Korea, Thailand and Viet Nam

I. Introduction

1. The Asia-Pacific Regional Space Agency Forum (APRSAF) was established in 1993 in response to the declaration adopted at the Asia-Pacific International Space Year Conference (APIC) in 1992, in order to promote and enhance space activities and international cooperation in the Asia-Pacific region. APRSAF has been holding annual meetings, jointly organized by Japan's Ministry of Education, Culture, Sports, Science and Technology (MEXT), the Japan Aerospace Exploration Agency (JAXA) and the organizations of host countries. APRSAF has been supporting the establishment of various collaboration initiatives to address common issues, such as disaster management, environmental protection and capacity-building for space environment utilization, so that participating parties will benefit from mutual cooperation. Through four working groups, members can share information about the activities and future plans of each country and of the region.

2. In response to a growing interest in space policy and law within the Asia-Pacific region, the Forum initiated a new space policy community-building effort in the region. APRSAF began holding a space policy plenary session during the twenty-fourth session, held in Bangalore, India, in 2017. Since then, APRSAF has been providing space policy practitioners in the region with opportunities to exchange information on their respective national space policies and laws and to network in order to enhance mutual understanding. Such efforts include the Space Policy Practitioners Workshop and the Inter-Regional Space Policy Dialogue between

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

Asia-Pacific and Europe, co-organized by APRSAF and the European Space Policy Institute (ESPI).

3. To advance these space policy community-building activities further, the National Space Legislation Initiative (NSLI) was proposed and officially launched at the twenty-sixth annual meeting of APRSAF, held in Nagoya, Japan, in 2019. It is the first initiative dedicated to space policy and law within the APRSAF framework.

A. Objective

4. NSLI was established with two objectives. It aims to:

(a) Promote information-sharing and mutual learning on the practices and examples of national space legislation and policies in the Asia-Pacific region;

(b) Enhance drafting capacities and implementation of national space legislation and policies in Asia-Pacific countries in accordance with international norms.

5. The main task of NSLI is to develop this report for submission to the sixtieth session of the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space. For this purpose, the Study Group, consisting of practitioners in space policy and law nominated by the NSLI participating governmental organizations, was established to conduct the joint study and draft the report.

B. Participating governmental organizations

6. The membership of NSLI is open to national governmental organizations[1] in the countries of the Asia-Pacific region. At the time of the submission of this report, about 40 participants from 17 organizations, including space agencies and space-related ministries from nine countries in the Asia-Pacific region (Australia, India, Indonesia, Japan, Malaysia, the Philippines, the Republic of Korea, Thailand and Viet Nam) were participating in NSLI.[2] The Study Group elected two co-chairs to lead the discussions: Ms. Setsuko Aoki, Professor of Law at Keio University Law School, and Mr. Dao Ngoc Chien, Deputy Director General, Department of High Technology of Viet Nam Ministry of Science and Technology (MOST). JAXA served as the secretariat of NSLI to support the work of the co-chairs and of the Study Group.

C. Methodology

7. The Study Group held 11 monthly online meetings instead of the originally planned face-to-face meetings, owing to limitations imposed by the coronavirus disease (COVID-19), in order to share information, discuss respective national space legislation and draft the report. Online meetings were held on 9 March 2020, 21 April 2020, 27 May 2020, 24 June 2020, 27 July 2020, 26 August 2020, 29 September 2020, 27 October 2020, 25 November 2020, 16 December 2020, 10 February 2021 and 18 March 2021 (as of the submission of the report at the end of March 2021). The discussions and draft of the report were based on an Excel-based questionnaire used to collect information on national space legislation, which was prepared by the secretariat and submitted by member organizations so that a comparison of the status

[1] National governmental organizations include the public agency operated under the government fund.

[2] The views expressed in this report are those of the NSLI Study Group and do not reflect the views of organizations to which the NSLI Study Group members belong.

of national space legislation among the countries of member organizations could be undertaken (see annex).[3]

8. The questionnaire included topics based on General Assembly resolution 68/74, entitled "Recommendations on national legislation relevant to the peaceful exploration and use of outer space". The recommendations on national legislation consist of eight elements: (a) the scope of space activities under national regulatory frameworks; (b) national jurisdiction over space activities; (c) authorization by a competent national authority; (d) conditions for authorization; (e) continuing supervision and monitoring; (f) national registry of space objects; (g) liability for damage; and (h) continuing supervision of non-governmental entities.

9. The questionnaire consists of three sections: (a) overview of space activities; (b) ratification status regarding the international regime; and (c) national legislation related to space activities. Each section has questions dedicated to the eight elements. The report was drafted on the basis of the analysis and discussion of the questionnaire in the Study Group.

D. NSLI purpose

10. The Study Group recognizes and reaffirms the importance of national legislation to ensure that States conduct their space activities in compliance with international legal frameworks. It submitted this report with respect to the recommendations on national legislation for consideration at the sixtieth session of the Legal Subcommittee of the Committee through Australia, India, Indonesia, Japan, Malaysia, the Philippines, the Republic of Korea, Thailand and Viet Nam, the member States to which the NSLI participating organizations belong (hereinafter "NSLI participating States").

11. The Study Group hopes that the report will contribute to tackling common regional issues and also contribute to global agendas such as the long-term sustainability of outer space activities and the stable use of outer space by improving mutual understanding of national space legislation and promoting the implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee on the Peaceful Uses of Outer Space (A/74/20, para. 163 and annex II).

II. Overview of space activities

A. Space activities

Launch vehicles

12. India, Japan and the Republic of Korea have developed their own launch vehicles and sounding rockets, and have launched them from launch sites in their territories. In Australia, Japan and the Republic of Korea, there are private entities that are engaged in the development and launch of their own launch vehicles and sounding rockets. Indonesia and Viet Nam have developed and launched their own sounding rockets, and Indonesia has a launch site for them. Indonesia is currently developing an equatorial spaceport and Thailand has plans to create a spaceport.

Satellites

13. All NSLI participating States are engaged in satellite data utilization and small/cube satellite programmes through government agencies and/or non-governmental entities.

[3] Questions and intentions are listed in the annex to the present report. All of the questions and answers are available on the NSLI page of the APRSAF website: https://aprsaf.org/initiatives/national_space_legislation.

14. All NSLI participating States have communication satellites operated by governmental and/or non-governmental organizations.

15. The NSLI participating States, except the Philippines, operate broadcasting satellites through government agencies and/or non-governmental entities. All NSLI participating States, except Australia, operate Earth observation satellites. India, Indonesia, Japan and the Republic of Korea operate meteorological satellites. India and Japan operate navigation satellite systems.

16. India, Japan, the Republic of Korea and Viet Nam have space science and exploration satellite programmes, while the satellite for scientific research of Thailand is under development.

Human space activity

17. Indonesia, Japan, Malaysia and the Republic of Korea are engaged in human space activities, such as experiments on the International Space Station (ISS) conducted by their national astronauts, and the selection and training of their astronauts. India has initiated a human space flight programme.

18. Indonesia, Japan, Malaysia, the Republic of Korea and Thailand have conducted experiments on ISS through government agencies and/or non-governmental entities. Some of them were conducted through the Kibo-ABC initiative implemented under APRSAF.[4]

Space situational awareness

19. Australia, India, Indonesia, Japan, the Republic of Korea, Thailand and Viet Nam have ground-based space situational awareness (SSA) facilities within their respective territories. These States have telescope facilities to monitor the space situation from the ground. There is no operational on-orbit SSA system among the NSLI participating States.

Space business promotion

20. The NSLI participating States are promoting business in the space sector with their governmental policies or mechanisms. In Australia, India, Indonesia, Japan, the Philippines, the Republic of Korea and Viet Nam, there are non-governmental organizations that promote space business (e.g., association for aerospace industry).

B. Actors in space activities

National space agencies

21. The NSLI participating States, except for Viet Nam, established their respective national space agencies.[5] The names of the respective agencies in English and their year of establishment are listed below:

(a) Australia: Australian Space Agency (ASA), 2018;

(b) India: Indian Space Research Organization (ISRO), 1969;

(c) Indonesia: National Institute of Aeronautics and Space (LAPAN), 1963;

(d) Japan: Japan Aerospace Exploration Agency (JAXA), 2003 (National Space Development Agency (NASDA), 1969–2003);

[4] Kibo-ABC is a collaborative programme aiming to promote utilization of the Japanese Experimental Module “Kibo” on board the International Space Station in the Asia-Pacific region and to share and build on the outcomes of Kibo utilization. Members of Kibo-ABC include organizations from Australia, Indonesia, Japan, Malaysia, the Philippines, the Republic Korea, Thailand and Viet Nam.

[5] A national space agency is a governmental or other legal entity sponsored by and acting on behalf of a Government that implements a national space programme.

(e) Malaysia: Malaysian Space Agency (MYSA), 2019 (National Space Agency (ANGKASA), 2002–2019);

(f) Philippines: Philippine Space Agency (PhilSA), 2019;

(g) Republic of Korea: Korea Aerospace Research Institute (KARI), 1989;

(h) Thailand: Geo-Informatics and Space Technology Development Agency (GISTDA), 2000.

22. Most of the NSLI participating States have specific legislation for the establishment of their national space agencies (with the exception of Australia, Malaysia and the Republic of Korea). In the case of Australia, ASA is a non-statutory entity within the Department of Industry, Science, Energy and Resources. In the case of Malaysia, MYSA is a government agency within the Ministry of Science, Technology and Innovation, which was established under a Cabinet of Malaysia decision. In the case of the Republic of Korea, KARI has been designated as a specialized organization for space development through domestic space law.

23. In Viet Nam, the Viet Nam Space Committee, which consults the Prime Minister and coordinates space-related activities in the country, is the primary governmental organization overseeing space activities.

Ministries responsible for space activities

24. A wide range of ministries are in charge of space-related activities in the NSLI participating States in accordance with their national policy agendas.[6] They include ministries responsible for science and technology, education, communication, information, economy and trade, natural resources and defence. In India, the Department of Space is responsible for space activities. In Viet Nam, while no specific ministry has been assigned to supervise space activities, all its ministries are engaged in space activities. The major ministries that are responsible for space activities in the NSLI participating States are listed below:

(a) Australia: Department of Industry, Science, Energy and Resources;

(b) India: Department of Space;

(c) Indonesia: Ministry of Communication and Informatics, Ministry of Research and Technology;

(d) Japan: Cabinet Office (CAO), Ministry of Education, Culture, Sports, Science and Technology (MEXT), Ministry of Internal Affairs and Communications (MIC), Ministry of Economy, Trade and Industry (METI);

(e) Malaysia: Ministry of Science, Technology, and Innovation (MOSTI),Ministry of Communications and Multimedia Malaysia (KKMM), Ministry of International Trade and Industry (MITI), Ministry of Energy and Natural Resources (KeTSA);

(f) Philippines: Department of Science and Technology (DOST), Department of National Defense (DND), Department of Information and Communications Technology (DICT), Department of Foreign Affairs (DFA), Department of Environment and Natural Resources (DENR), Department of Agriculture (DA), Department of Trade and Industry (DTI), Department of Finance (DOF), National Economic and Development Authority (NEDA);

[6] National space agencies are also established in accordance with national space policy agendas. For example, the goal of ASA is to grow Australia's space industry, which is consistent with the overarching economic objectives of the Department of Industry, Science, Energy and Resources. GISTDA has been the main space agency in Thailand since its inception. It started with Earth observation and has been expanding to cover more missions, namely, developing space technology, boosting a space economy and establishing a national space programme. The Cabinet assigned GISTDA as the focal point of Thailand for intergovernmental and regional space activities.

(g) Republic of Korea: Ministry of Science and ICT (MSIT);

(h) Thailand: Cabinet Office, Ministry of Higher Education, Science, Research and Innovation (MHESI), Ministry of Digital Economy and Society (MDES), Ministry of Defense (MOD), Ministry of Foreign Affairs (MFA);

(i) Viet Nam: Ministry of Information and Communications (MIC), Ministry of Science and Technology (MOST), Ministry of Natural Resources and Environment (MONRE), Ministry of Transport (MoT).

Private entities, universities, and/or research institutes (non-governmental entities)

25. In the NSLI participating States, non-governmental entities are engaged in the development and/or operation of small/cube satellites and satellite data utilization.

26. Additionally, in the NSLI participating States, except in India and Viet Nam, private entities are engaged in the development and/or operation of communication and broadcasting satellites. In Japan and the Republic of Korea, private entities are engaged in the development and operation of Earth observation satellites.

27. In Indonesia, Japan, Malaysia, the Republic of Korea and Thailand, private entities are also engaged in the space environment utilization programme, which includes experiments and technology demonstration, utilizing microgravity, radiation and other unique features of the space environment.

III. Ratification status regarding the international regime

A. Ratification status regarding the major space treaties

28. The NSLI participating States have ratified or signed the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, and the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, while six States have ratified or signed the Convention on International Liability for Damage Caused by Space Objects and five States have ratified the Convention on Registration of Objects Launched into Outer Space. Three States have ratified or signed the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies. The Status of the ratification or signing of each treaty is listed below:

(a) The Outer Space Treaty has been ratified by Australia, India, Indonesia, Japan, the Republic of Korea, Thailand and Viet Nam, and signed by Malaysia and the Philippines;

(b) The Rescue Agreement has been ratified by Australia, India, Indonesia, Japan, the Republic of Korea and Thailand, and signed by Malaysia, the Philippines and Viet Nam;

(c) The Liability Convention has been ratified by Australia, India, Indonesia, Japan and the Republic of Korea, and signed by the Philippines;

(d) The Registration Convention has been ratified by Australia, India, Indonesia, Japan and the Republic of Korea;

(e) The Moon Agreement has been ratified by Australia and the Philippines, and signed by India.

B. Membership of the Committee on the Peaceful Uses of Outer Space

29. All NSLI participating States are members of the Committee on the Peaceful Uses of Outer Space. The year they joined Committee is as follows:

(a) Australia: 1958;

(b) India: 1958;

(c) Indonesia: 1973;

(d) Japan: 1959;

(e) Malaysia: 1994;

(f) Philippines: 1977;

(g) Republic of Korea: 1994;

(h) Thailand: 2004;

(i) Viet Nam: 1980.

C. National registries

30. The NSLI participating States, except Viet Nam, have submitted information on their space objects to the Secretary-General of the United Nations according to the Registration Convention, while Malaysia, the Philippines and Thailand have not ratified the Registration Convention and do not have a national registry of space objects in accordance with the Convention, but voluntarily submit the information.[7,8]

IV. National legal scheme relating to space activities

A. General status of national space legislation

Overview of legislation relating to space activities

31. Australia, Indonesia, Japan, the Philippines and the Republic of Korea have comprehensive national legislation concerning their space activities. The name of the respective legislation in English and the years of enactment are listed below:

(a) Australia: Space (Launches and Returns) Act, 2018;

(i) Space (Launches and Returns) (General) Rules 2019;

(ii) Space (Launches and Returns) (Insurance) Rules 2019;

(iii) Space (Launches and Returns) (High Power Rocket) Rules 2020;

(b) Indonesia: Act on Space Activities, 2013;

(c) Japan: Basic Space Law, 2008/Space Activity Act, 2016;

(d) Philippines: Philippine Space Act, 2019;

(e) Republic of Korea: Space Development Promotion Act, 2005/Space Liability Act 2008.

[7] Malaysia is to have a national registry when the Malaysian Space Board Bill 2020, which is being drafted, is enacted.

[8] Thailand registered the Thailand Earth Observation Satellite (THEOS) with the Register of Objects Launched into Outer Space maintained by the United Nations as of 27 January 2009.

32. India, Indonesia, Malaysia and Thailand have plans for drafting new legislation.[9]

33. Indonesia, Japan and Viet Nam have legislation or national regulatory frameworks dedicated to Earth observation:

(a) Indonesia: Government Regulation (Number 11) on Remote Sensing, 2018;

(b Japan: Remote Sensing Data Act, 2016;

(c) Viet Nam: Governmental Decree on Remote Sensing, 2019.

Frequency allocation

34. All NSLI participating States have radio laws, and frequency allocation has been commonly conducted by the authorities responsible for communication, both terrestrial and in outer space.

Export control

35. All NSLI participating States have export control laws. Relevant authorities are governmental organizations in charge of trade, commerce, finance, energy and defence.

36. The NSLI participating States, except Indonesia, Thailand and Viet Nam, have control lists of goods and technologies qualified for use in space. Indonesia is currently in the final process of issuing a government regulation on space technology acquisition, which, among others, will regulate export controls in the space sector.

Space debris mitigation

37. Australia, Indonesia, Japan and the Republic of Korea have legal measures in place for space debris mitigation. In India, ISRO follows the guidelines for its missions.

Laws and regulations related to space commercialization

38. No laws and regulations specific to space commercialization exist within the NSLI participating States.

39. On the other hand, there are policies related to space commercialization which have been included in their strategies and implemented via dedicated organizations, or provided in legislation.

40. In Australia, the Government's aim to grow Australia's space industry is outlined in the Australian Civil Space Strategy 2019–2028.

41. As for India, the Government has approved space sector reforms for greater participation of the private sector in space activities and established the Indian National Space Promotion and Authorization Centre (IN-SPACe), which will act as a regulatory and authorizing agency.

42. Indonesia's master plan 2016–2040 on space activities, which is regulated by Presidential Decree No. 45 of 2017, includes space commercialization as one of the focus programmes to be developed. Indonesia is also in the process of issuing a new regulation on commercial space activities.

43. In Japan, the Space Policy Committee published "Space Industry Vision 2030", in which Japan has set the goal of doubling the market scale of the domestic space industry as a whole by as early as 2030.

44. In the Republic of Korea, Article 18 of the Korea Space Development Promotion Act includes a provision on commercialization promotion that reads "Minister of

[9] In Indonesia, legislation on commercial space activities, acquisition of space technology, and the development and operation of a spaceport is under drafting. Malaysia's legislation is under drafting and expected to be enacted in 2021/2022. Thailand's is expected to be enacted in 2021/2022. Viet Nam's will be drafted in 2021.

MSIT shall provide private entities with supporting measures in order to promote civil space activities”.

B. Status of laws and regulations concerning satellite operation

Status of applicable legislation, regulation and administrative measures

45. All NSLI participating States, except for Viet Nam, have laws/regulations or administrative measures that apply to operating satellites.

46. Ministries responsible for satellite operation in the respective States are as follows:

(a) Australia: Department of Industry, Science, Energy and Resources (Australian Space Agency), Australian Communications and Media Authority (in relation to spectrum);

(b) India: Department of Space;

(c) Indonesia: Ministry of Communication and Information;

(d) Japan: Cabinet Office (CAO), Ministry of Internal Affairs and Communications (MIC);

(e) Malaysia: Ministry of Communications and Multimedia (Malaysian Communications and Multimedia Commission);

(f) Philippines: Department of Information and Communications Technology (National Telecommunications Commission);

(g) Republic of Korea: Ministry of Science and ICT (MSIT);

(h) Thailand: Office of The National Broadcasting and Telecommunications Commission (NBTC);

(i) Viet Nam: Viet Nam Post and Telecommunication Corporation (VNPT), Viet Nam Academy of Science and Technology (VAST).

Conditions for licensing the satellite operation

47. Some NSLI participating States’ regulations provide clear conditions or requirements for licensing satellite operations, such as registration of the satellite and a proper satellite operation plan through their national regulatory frameworks. In most of the NSLI participating States, a specific licence or permission for frequency utilization is required for satellite operation.

Reflection of the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses in Outer Space in the licensing condition

48. Laws and regulations in Australia, Indonesia and Japan provide conditions/requirements for authorization/licensing applicable to satellite operators, including private operators, and safety and technical standards that are in line with the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space, endorsed by the General Assembly, and/or other international guidelines or standards. The Republic of Korea has the Ministerial Guidelines reflecting the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space endorsed by the General Assembly.

Licensing status for satellite launch from other countries

49. All NSLI participating States, including their private and non-governmental entities, have launched satellites from foreign countries. In the case of a foreign launch procured by the Government, States do not need any licence/permission in accordance with their national space laws. This is addressed by government-to-

government agreements or governmental contracts with the foreign non-governmental launch provider.

50. In the case of a foreign launch procured by non-governmental entities, national authorization types are divided into two: (a) the first type is that a non-governmental entity needs a licence from its national State to launch a satellite from outside its country. In other words, a licence/permission to procure the launching of a space object is needed under its national legal frameworks;[10] (b) the second type is that a non-governmental entity does not need a launch licence when it procures launching from a foreign State, while a licence is required when operating a satellite.

51. Australia, Indonesia, the Republic of Korea and Thailand have legislation of type (a), and Japan, the Philippines and Viet Nam have legislation of type (b).

C. Status of laws and regulations concerning rocket launches

Status of launch site

52. Currently, Australia,[11] India, Indonesia, Japan and the Republic of Korea operate launch sites in their territories, while Malaysia and Thailand have a plans to establish launch sites within their territories.

53. Australia, Indonesia and Japan have laws or regulations that govern the establishment and operation of launch sites in their territories.[12]

54. Ministries responsible for launch sites in the respective NSLI participating States are listed as follows:

(a) Australia: The Department of Industry, Science, Energy and Resources (Australian Space Agency);

(b) India: Department of Space;

(c) Indonesia: LAPAN, Ministry of Transportation;

(d) Japan: Cabinet Office (CAO);

(e) Republic of Korea: Ministry of Science and ICT (MSIT);

(f) Viet Nam: Ministry of Defense.

Status of applicable legislation, regulation and administrative measures

55. Australia, India, Indonesia, Japan and the Republic of Korea have laws, regulations or administrative measures those apply to rocket launch activities.[13]

56. Ministries responsible for rocket launches in the respective participating States are as follows:

(a) Australia: Department of Industry, Science, Energy and Resources (Australian Space Agency);

(b) India: Department of Space;

(c) Indonesia: Ministry of Transportation, Ministry of Communication and Information;

[10] This is further divided into two subtypes. Some States require a licence to operate the satellite concerned in addition to a licence to procure the launching. Other States require only a licence to procure the launching, and the notion of the operation of a satellite is included in the launch licence concerned.

[11] Includes the Woomera Prohibited Area, which is capable of supporting civil launch activities.

[12] Malaysian Space Board Bill 2020, which is under drafting, will regulate the establishment and the operation of the launch site in its territory.

[13] Japan's Space Activity Act does not apply to suborbital launch vehicles, including sounding rockets, which are subject to general laws/regulations related to explosives control and others.

(d) Japan: Cabinet Office (CAO) (launch vehicle);[14]

(e) Republic of Korea: Ministry of Science and ICT (MSIT);

(f) Viet Nam: Ministry of Defense.

Conditions for launch licence

57. In Australia, Indonesia, Japan and the Republic of Korea, conditions for obtaining a launch licence, such as a proper plan and capacity for a safe launch, and meeting international regulations, are provided through their national regulatory frameworks, while in India, at present all launches are conducted by the national space agency, ISRO.

Status of the third party liability requirement

58. In Australia, Indonesia, Japan and the Republic of Korea, it is mandatory for private entities to purchase insurance to cover the third party liability (TPL) when launching a launch vehicle.[15,16] Indonesia, Japan and the Republic of Korea have a governmental indemnification mechanism for such private entities to offer compensation for damages they may incur. Since all launch activities are conducted by the Governments of India and Viet Nam, no such mechanism exists.

59. In Australia, insurance rules set out a specified minimum amount of insurance, depending on the type of launch or return. This may be either zero or 100 million Australian dollars, or it may be determined through the "maximum probable loss methodology". The amount of government compensation to Australian nationals for damage is set so that it does not exceed 3 billion Australian dollars.

60. In Japan, the Space Activities Act has established compensation schemes regarding TPL for damages caused by launches. An applicant for a launching rocket is required to take security measures for compensation for damages, and the amount of the security measures for compensation depends on the launch vehicles. Government indemnification will be applied to the damage and the liability amount not covered by the security measures for compensation. The Act and related orders came into effect in November 2018.

61. In the Republic of Korea, the minimum amount of TPL insurance is set by MSIT considering the characteristics of space objects, the difficulties of technology, circumstances around the launch site and domestic and foreign insurance markets. The amount of compensation to be paid to the launch party is limited to 200 billion won (equivalent to about 200 million United States dollars) under any circumstances. If the amount of compensation were to exceed the insured amount, the Government would provide the launch party with the financial support after approval by the National Assembly.

V. Findings

A. Expansion of space activities and actors and importance of national space legislation

62. Our findings show that the space activities of NSLI participating States have been rapidly developing recently. The satellite has become a common infrastructure in all States. Some of the States have launch vehicles and launch sites in operation and others have them under development or in the planning phase. In accordance with the advancement of space activities, national space agencies have been established in

[14] Ministry/ministries responsible for suborbital rocket in Japan is/are under consideration.

[15] The Malaysian Space Board Bill 2020, which is being drafted, will regulate mandatory purchase of TPL insurance as well.

[16] In Japan, it is possible to replace TPL insurance with other measures, such as deposit with official depository.

most States and the activities of non-governmental entities have been expanding. This trend has led to the establishment of comprehensive national space legislation in all NSLI participating States.

63. Among NSLI participating States, India, Japan and the Republic of Korea have launch vehicles and launch sites in operation. Indonesia has a launch site for sounding rockets and is developing an equatorial spaceport. Australian companies are developing launch vehicles and launch sites to launch satellites from Australian territory and support overseas companies to launch from Australia. Malaysia and Thailand are planning to develop launch sites.

64. Satellites are recognized as common infrastructure, and all NSLI participating States are currently operating them. Communication satellites, broadcasting satellites and Earth observation satellites are the most common infrastructure within NSLI participating States, while meteorological and navigation satellites are less common. Space science and exploration is one of the least common areas of space activities, where only a limited number of States own/operate such satellites in contrast to application satellites. Satellite data utilization and small/cube satellite development are the common areas of space activities conducted by NSLI participating States.

65. As satellite activities in each country increase and non-governmental operators emerge, so do governmental organizations that authorize and supervise these entities. From that viewpoint, depending on the advancement of satellite utilization, NSLI participating States can be divided into three groups: (a) a country that has a ministry/agency that authorizes and supervises satellite operations; (b) a country that has established a committee under or independent from the ministry to authorize and supervises satellite operations; and (c) a country that does not have a body that supervises and manages satellite operations.

66. Establishing a national space agency seems to be a major milestone in the development of national space activities. India, Indonesia and Japan established their space agencies in the 1960s. The Republic of Korea established its space agency in 1989, followed by Thailand in 2000 and Malaysia in 2002. Most recently, Australia established its national space agency in 2018, followed by the Philippines in 2019.

67. An expansion of actors along with non-governmental entities are newly engaged in the space activities of NSLI participating States. Furthermore, private companies are engaged in the development and operation of launch vehicles. In all NSLI participating States, private entities are engaged in satellite operations.

B. Current status and challenges to the international and national legal frameworks for space activities

68. Various national efforts to conduct space activities in compliance with international legal frameworks, including the Outer Space Treaty, are recognized by all NSLI participating States, while further laws and regulations need to be considered in order to ensure sustainable space activities. Given the global expansion of space activities by an increase in players, it is a common challenge for NSLI participating States to establish the proper national space laws and regulations in order to keep pace with the advancement of space activities.

69. The Outer Space Treaty can be seen as a foundational international norm by all NSLI participating States, as they have ratified or signed the Treaty. That means that all NSLI participating States shall bear international responsibility for their space activities. In accordance with the advancement of space activities, including those conducted by private entities, national legal frameworks need to be established to comply with the Outer Space Treaty, especially article VI, which requires NSLI participating States to authorize and continuously supervise non-governmental entities' space activities.

70. The NSLI participating States' national legislation relating to space activities is rapidly developing. Indonesia, Japan and the Republic of Korea have a long history

of space activities. The comprehensive national space legislation was enacted after 2000, and there are still challenges on legislation, such as regulations for suborbital rockets. The emerging private entities that conduct space activities are pushing the NSLI participating States to establish their national space legislation to comply with international legal frameworks. Australia has amended regulations in response to the entry of private sector actors who seek to launch and operate satellites.[17] In India, Malaysia and Thailand, national space legislation is under development and in Viet Nam, national space legislation will be drafted in 2021.

71. The comprehensive national space laws and regulations of the NSLI participating States primarily focus on the launch of a launch vehicle carrying a satellite/satellites and the operation of a satellite from a ground station to command and control.

72. Some national laws regulate specific obligations and conditions of the registration of space objects, but it is not a common practice among the NSLI participating States. Specific regulation on the registration of space objects may be provided in future national space activity laws.

73. The international laws developed in the International Telecommunication Union have served as a coordination mechanism of space activities through the coordination of frequencies and orbital slots. Among NSLI participating States, legal and administrative matters on frequencies and orbital slots to carry out space activities are in most cases conducted in accordance with radio laws and telecommunications laws, which have existed for several decades. It is expected that space activities will remain regulated in terms of telecommunications through radio laws and/or telecommunications laws, owing to technical specifications and long-standing State practice.

74. It is also expected that areas of export control in space activities will remain regulated in national export control laws and regulations, although it is likely that the term “export control” may be used as one of the conditions to issue a licence. Currently, national export control laws are referred to when granting a licence to procure the launching or operate a satellite, whether national space laws exist or not. In some cases, national export control laws are in conformity with export control regimes, such as the Missile Technology Control Regime for launch vehicles and Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies for launch vehicles and satellites.

75. Space debris mitigation has been a recent legal and technical challenge for sustainable space activities. However, it is not necessarily clear how non-legally binding instruments such as the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space (A/62/20, annex) and the Guidelines for the Long-term Sustainability of Outer Space Activities have been implemented in the NSLI participating States. It is clearer when space debris mitigation measures are mentioned as one of the conditions to issue a licence in a national space activities act, and the licensing schemes in the related States include the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space and also the corresponding guidelines of the Inter-Agency Space Debris Coordination Committee. Even in that case, methods and manners of the implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities would remain vague. Further consideration and discussion in the regional and international arenas would be helpful in implementing the Guidelines for the Long-term Sustainability of Outer Space Activities nationally for each participating State.

[17] Australia has recently amended their civil space regulatory framework as a result of a review to ensure that Australia’s space regulation is appropriate for technology advancement and does not unnecessarily inhibit innovation in Australia's space industry.

C. Significance and implications of NSLI

76. The significance and implications of NSLI, which has facilitated the sharing of information and fruitful discussions on legal challenges and best practices at the regional level as well as the international level, cannot be overemphasized. NSLI has provided an effective regional model for enhancing capacities in establishing and implementing national space legislation.

77. The significance and implications of NSLI can be found from both regional and international perspectives. As for regional perspectives, NSLI enhances the legislating and implementation capacity of national space law through mutual learning of various States' practices in this region. Furthermore, by enhancing an understanding of each country's legal and regulatory framework, NSLI could also build a collaborative platform for tackling common regional issues. The other important significance is that NSLI will contribute to the global agenda, such as the sustainability of space activities and the stable use of outer space.

78. The significant features of NSLI include:

(a) Community-building among space law and policy practitioners in the region;

(b) Mutual learning of States' practices through exchanging information using a common format among space law practitioners in the region;

(c) Joint analysis and report drafting on the status of space-related laws in the region by space law practitioners;

(d) Direct contribution to the United Nation's agendas and global space community;

(e) Building a foundation for future discussions on common regional issues.

Annex

Questionnaire

The questionnaire was prepared by the NSLI secretariat and based on General Assembly resolution 68/74, entitled "Recommendations on national legislation relevant to the peaceful exploration and use of outer space". A total of 16 questions with some subquestions are asked. The questions and intentions behind them are as below.

1. What kinds of space activities have been conducted in your country, including by government agencies, private entities, research institutes, and/or laboratories?

Question 1 aims to determine what kinds of space activities the member States are engaged in, including activities by governmental and non-governmental entities, as a premise for national legislation. This question corresponds to the scope of space activities targeted by national regulatory frameworks.

2. Is there an independent space agency in your country? Is there any national legislation to establish such an agency?

Question 2 aims to determine the development of space activities in member States, presuming that the establishment of a national space agency is considered a major milestone in the development of national space activities, and national legislation will be needed to establish such an agency.

3. Has your country become a party to the five United Nations treaties on outer space?

4. Is your country a member of COPUOS?

Questions 3 and 4 aim to examine how the international regime based on the United Nations treaties (Outer Space Treaty, Astronaut Rescue Agreement, Liability Convention, Registration Convention and Moon Agreement) works in member States as a premise to examine how national legislation meets the recommendations on national legislation (resolution 68/74).

5. Does your country submit national registry information to the United Nations?

Question 5 aims to determine whether the registration of space objects is common practice in the member States, as registration is required by the Registration Convention and is one of the key elements of the recommendations on national legislation.

6. Does your country have any independent national legislation concerning space activities?

Question 6 aims to determine what kind of approach is taken for national legal frameworks for space activities. The recommendations on national legislation recognize that there can be different approaches to national legislation, that is, by means of unified acts or a combination of national legal instruments.

7. Does your country have any laws governing the control and management of radio wave allocation?

8. Does your country have any laws governing export control?

Questions 7 and 8 aim to examine whether member States have established their national legislation in accordance with progress in their national space activities, such as operation of spacecraft and dealing with sensitive goods and technologies within the international legal regime.

9. Are there any universities or other laboratories in your country that operate or are planning to operate satellites? Is there any national legislation for operating satellites?

10. Has your country, including private entities, launched any satellites from other countries? Are there any licenses required in your country?

11. Does your country, including private entities, have or plan to have any launch sites within its territory? Is there any national legislation for these launch sites?

12. Does your country, including private entities, launch or plan to launch rockets, including suborbital rockets? Is there any national legislation for these rockets?

Questions 9, 10, 11 and 12 aim to determine the progress of national space activities, including those conducted by non-governmental entities, and the development of national legislation corresponding to those activities. The necessity of national legislation depends on the development of space activities and players in each country. In particular, authorization, continuing supervision and monitoring of space activities conducted by non-governmental entities are key elements of the recommendations on national legislation.

13. If a private entity intends to launch a launch vehicle or satellite, is TPL mandatory in your country?

14. In relation to question 13, does your country have a governmental indemnification mechanism for private entities with regard to liability?

Questions 13 and 14 aim to determine whether member States have national legislation that satisfies the responsibility for a launching state and supports commercial launch activities.

15. What kinds of legal measures have been taken with regard to space debris mitigation in your country?

Question 15 aims to determine whether legal measures for space debris mitigation have been established, which is emphasized in the recommendations on national legislation as a key element to ensure the safety of space activities.

16. If your country has legislation for "Space commercialization" related to question 6, what is regulated in the legislation?

Question 16 aims to determine whether member States have legislation that promotes commercial space activities.