

International Space Law Applicability in Indian Perspective

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Abstract: India is party to all space treaties developed by the United Nations (for Moon Agreement, India has signed but not ratified). Indian Space Research Organisation (ISRO) is a member of Interagency Space Debris Coordination Committee (IADC) participated by major space agencies. United Nation Committee on Peaceful Uses of Outer Space (UNCOPUOS) can formulate and draft various treaties, conventions and agreements that essentially became the corpus of International Law on outer space. International space law applicable to the country involves National and International rules, guidelines, procedures, regulations and treaties for governing all space related activities. Indian is one of the leading world powers in space technology at present. Legal issues are important with respect to launch services, satellite telecommunication, satellite broadcasting, earth observation (Remote Sensing), satellite data processing and distribution, navigational systems, intellectual property rights etc for application of customary practices. Incorporation of Remote Sensing data policy, satcom policy, telecom policy, mapping policy is visualized for Indian space activities.

Keywords: space, law, policy, treaty, agency, agreement

1. Introduction

India has highly respectable position in space technology today. There is no legislation concerning remote sensing but a data policy was made for the Indian Space Research Organization (ISRO) in 2001. It is distinctive to articulate a specific resolution 5.8 m as a criterion; India has adopted a broader application of the access policy rather than the original Non-Discriminatory Principle [1]. India is also participating actively in a variety of international forum like United Nations Committee on Peaceful uses of Outer Spaces (UNCOPUS), International Council of Scientific Unions (ICSU), International Astronautical Federation (IAF) etc. in shaping global space and law policy [2]. With the launch of Polar Satellite Launch Vehicle (PSLV) on 15 October 1994, India achieved the indigenous satellite launch capability. India has now specially made PSLV and Geosynchronous Satellite Launch Vehicle (GSLV) [3].

Article 51 of the Indian Constitution imposes on the state obligation to strive for the promotion of international peace and security, including maintaining just and reasonable relation between nations, respect for international law and treaty obligation, and settlement of international dispute by arbitration [4]. Under Art 73 the executive power of the union extends a) to the matter relating to which parliament has power to make laws, b) to exercise of such rights, authority and jurisdiction as one exercisable by the Government of India by virtue of any treaty or agreement [5]. Once it was understood that the air space and outer space were legally and physically separable operational environments, it was clear that legal regimes to apply to these two areas should be substantially different [6].

The Secretariat of the Asia-Pacific Multilateral Cooperation in Space Technology and Applications (AP-MCSTA), was established in Beijing, China, facilitated the coordination of the Asia-Pacific projects and organized training courses for decision makers of Asian countries [7-10]. On the other hand, the Asian region has also a forum of space agencies

called the Asia-Pacific Regional Space Agency Forum (APRSAP), since 1993, to discuss issues of space cooperation in the Asia-Pacific region [11-13]. African resource management (ARM) constellation is a result of the four teams in Algeria, Nigeria, Kenya and South Africa working together, this constellation seeks to make space technology more accessible for applications in food security, environmental monitoring, land use, water management and public health [14-15].

Germany enacted its legislation on the distribution of remote sensing satellite data in 2007, as a way of responding to the launch of TerraSAR-X [16-17]. France has operated the SPOT satellites, and Spot Image Corporation has distributed the data. The 2008 Act, concerning space activities, deals with data in its Article 23 to 25 [18]. The International Law Association at its New Delhi Conference in 2002 [19] reached the conclusion that no amendments should be introduced to the current text of the Liability Convention and that concrete suggestions consisted in encouraging States to accept the binding nature of the Claims Commission decisions and awards, in accordance with Article XIX, paragraph 2 of the Convention and following the proposal made by the Austrian delegation to the Legal Subcommittee of COPUOS in 1998.

Debate is also focused on whether space should continue to be legally defined as part of the "common heritage of man," and therefore unavailable for national claims, or whether its legal definition should be changed to allow private property in space [20-21]. As of 2013, NASA's plans to capture an asteroid by 2021 have raised questions about how space law would be applied in practice [22]. In 2000, the United States issued detailed regulations for commercial remote sensing systems [23]. These were issued pursuant to the Land Remote Sensing Policy Act of 1992 [24]. In 1999, Canada began developing national regulations that are still in the law-making process [25].

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France has a remote sensing legal framework [26]. Japan also has various “provisions of existing relevant national law[s]” and data policies [27]. India, while not having formal national legislation, does have an extensive policy framework that has some provisions that are analogous to laws in other nations. All of these regimes accept or incorporate some provisions of the Principles [28]. U.S. law explicitly endorsed aspects of the Principles twice in its Federal statutes governing remote sensing activities [29].

2. International Law

International law on outer space is contained in six international instruments adopted under the auspices of the United Nations (UN) through the General Assembly’s Committee on Peaceful Uses of Outer Space (COPUOS). Duties imposed on ratifying states are contained in specific treaty provisions as under:

2.1 The 1967 Outer Space Treaty

This is the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies. State Parties to the Outer Space Treaty bear international responsibility for national activities in outer space including the moon and other celestial bodies, whether such activities are carried out by governmental or non-governmental entities (NGO) and for assuring that national activities are carried out in conformity with the provisions set forth in the Outer Space Treaty (OST).

In other words a ratifying State is bound to the principles of exploration and use of outer space for peaceful purposes, international cooperation, no national appropriation and no weaponization. Furthermore the State is bound to ensure that all that such activities are duly authorized and carried out under its continuing supervision. The Outer Space Treaty (OST) imposes liability for damage by making a launching state internationally liable for damage to another State Party, its own natural or juridical person on earth, air and outer space, if its space object or component causes damage. The outer space treaty is the most widely adopted treaty, with 103 parties.

2.2 The 1968 Rescue Agreement

This is the 1968 Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space. The Agreement on the rescue of astronauts, the return of astronauts and the return of objects launched into outer space gives detailed resolution to the duty imposed on State parties in terms of Article V of the OST 1967.

2.3 The 1972 Liability Convention

This is the 1972 Convention on International Liability for Damage Caused by Space Objects. The liability provisions of the OST have been supplemented and expanded by the 1972 Liability Convention. Article I of the Liability Convention defines the term “launching state” and Article II establishes

absolute liability for damage caused on the earth or to aircraft in flight. In other words, no proof of damage caused on earth or to aircrafts in flight is required to be proffered by the claimant. However, Article IV allows mitigation of liability on the basis of proof of gross negligence on the part the claimant.

On the other hand, Article III of the Convention establishes fault-based liability for damage caused in outer space. Article VII exonerates the launching state from liability in respect of nationals of launching state and foreigners participating in launch. In the context of this Paper, the most important point to note is that it is the State, and not a private person whose space object has caused damage, that is directly held internationally liable. Therefore, national legal system needs to be in place for the reimbursement of the compensation to the State which has been required to pay to the victim(s) of an accident by the space object of an NGO.

2.4 The 1974 Registration Convention

This is the 1975 Convention on Registration of Objects Launched into Outer Space. Under Article VIII of the OST, States are required to maintain a “Registry” of space objects launched into outer space for the purpose of identification of space objects. The article postulates that a “state party to the treaty on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object and personnel in outer space or on a celestial body.”

The Registration Convention further develops these provisions and under Article IV imposes another duty on each state of registry to provide the UN Secretary-general of the United nations the following information concerning each space object carried on its registry: (a) name of launching State or States; (b) an appropriate designator of the space object or its registration number; (c) date and territory or location of launch; (d) basic orbital parameters (including nodal period, inclination, apogee and perigee); and (e) general function of the space object. The registration of objects launched into outer space embellishes this duty in order to facilitate the identification of the State which has the „jurisdiction“; „control“ and the „ownership“ of the space object or parts thereof that is alleged to have caused third party damage as condition precedent to imposing „liability“ for such damage and seeking compensation for the same. Thus provisions of the 1967 OST and the 1968 Registration Convention imply a requirement for a national regulatory mechanism or law to serve as the basis for establishing a national registry for space objects.

2.5 The 1979 Moon Agreement

This is the 1979 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies. Although the Moon Agreement has come into force in 1984 after the 5th ratification, it remains the least space ratified. On 29th June 2004 Belgium became the latest entrant making up ten countries in all which have ratified the Agreement. Five countries, including India have signed the Agreement signaling their intention undertake international duties and obligations in respect to their activities on the Moon and

other celestial bodies, but have formalized it by ratification as yet.

It is important to note that U.S.A., Russia, China and the European Space Agency have not endorsed the Agreement in any manner. It is also important to take note India's position in light of the fact that a Moon Mission Chandrayan is slated for 2008, particularly if it wishes to ensure legally smooth exploration of the Moon. The Agreement supplements the provisions of the OST and specifically (a) entitles State Parties to "the right to collect on and remove from the moon samples of its minerals and other substances" and use "them for scientific purposes" (b) declare the natural resources of the moon as the "common heritage of mankind" and prohibits any threat or use of force or any other hostile act or threat of hostile act on the Moon. It needs no reiteration that the whole point of the duties and liabilities imposed by the international treaties relating to outer space is to enable the concerned States that suffer damage to claim compensation in terms of the procedure enumerated in the treaties.

The recent decades have witnessed some crowding in outer space, particularly the Low Earth Orbit and in some measure the Geostationary Orbit which carry satellites that perform civilian functions from navigation and remote sensing to telecommunications and broadcasting. The ceaseless efforts by United Nation Committee on Peaceful Uses of Outer Space (UNCOPUOS), United Nation Office for Outer Space Affairs (UNOOSA) to encourage member states to adopt national space legislation have not met with satisfactory results. The moon treaty has only 13 parties however, and many consider it to be a failed treaty due to its limited acceptance. India is the only nation that has both signed the moon treaty and declared itself interested in going to the moon. India has not ratified the treaty; an analysis of India's treaty law is required to understand how this affects India legally.

2.6 The 1963 Partial Test Ban Treaty

The 1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space, and Under Water banned the testing of nuclear weapons in outer space.

3. UN Principles

The United Nations General Assembly adopted five declarations and legal principles which encourage exercising the international laws, as well as unified communication between countries. The five declarations and principles are as follows.

3.1 Exploration and Uses of Outer Space (1963)

The Declaration of Legal Principles Governing the Activities of States in the Exploration and Uses of Outer Space (1963): All space exploration will be done with good intentions and is equally open to all States that comply with international law. No one nation may claim ownership of outer space or any celestial body. Activities carried out in space must abide

by the international law and the nations undergoing these said activities must accept responsibility for the governmental or non-governmental agency involved. Objects launched into space are subject to their nation of belonging, including people. Objects, parts, and components discovered outside the jurisdiction of a nation will be returned upon identification. If a nation launches an object into space, they are responsible for any damages that occur internationally.

3.2 Earth Satellites and Television Broadcasting (1982)

The Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting (1982): Activities of this nature must be transpire in accordance with the sovereign rights of States. Said activities should "promote the free dissemination and mutual exchange of information and knowledge in cultural and scientific fields, assist in educational, social and economic development, particularly in the developing countries, enhance the qualities of life of all peoples and provide recreation with due respect to the political and cultural integrity of States." All States have equal rights to pursue these activities and must maintain responsibility for anything carried out under their boundaries of authority. States planning activities need to contact the Secretary-General of the United Nations with details of the undergoing activities.

3.3 Remote Sensing of the Earth from Space (1986)

The Principles Relating to Remote Sensing of the Earth from Outer Space (1986): Fifteen principles are stated under this category. The basic understanding comes from these descriptions given by the United Nations Office for Outer Space Affairs: (a) The term "remote sensing" means the sensing of the Earth's surface from space by making use of the properties of electromagnetic waves emitted, reflected or diffracted by the sensed objects, for the purpose of improving natural resources management, land use and the protection of the environment; (b) The term "primary data" means those raw data that are acquired by remote sensors borne by a space object and that are transmitted or delivered to the ground from space by telemetry in the form of electromagnetic signals, by photographic film, magnetic tape or any other means; (c) The term "processed data" means the products resulting from the processing of the primary data, needed to make such data usable; (d) The term "analyzed information" means the information resulting from the interpretation of processed data, inputs of data and knowledge from other sources; (e) The term "remote sensing activities" means the operation of remote sensing space systems, primary data collection and storage stations, and activities in processing, interpreting and disseminating the processed data.

3.4 Use of Nuclear Power Sources in Outer Space (1992)

3.4.1 Principles to Use of Nuclear Power Sources

The Principles Relevant to the Use of Nuclear Power Sources in Outer Space (1992) are important for world community. "States launching space objects with nuclear power sources on board shall endeavour to protect individuals, populations

and the biosphere against radiological hazards. The design and use of space objects with nuclear power sources on board shall ensure, with a high degree of confidence that the hazards, in foreseeable operational or accidental circumstances, are kept below acceptable levels..."

3.4.2 International Cooperation in the Exploration

The Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries (1996) are agreed by all participating Nations. "States are free to determine all aspects of their participation in international cooperation in the exploration and use of outer space on an equitable and mutually acceptable basis. All States, particularly those with relevant space capabilities and with programmes for the exploration and use of outer space, should contribute to promoting and fostering international cooperation on an equitable and mutually acceptable basis.

In this context, particular attention should be given to the benefit for and the interests of developing countries and countries with incipient space programmes stemming from such international cooperation conducted with countries with more advanced space capabilities. International cooperation should be conducted in the modes that are considered most effective and appropriate by the countries concerned, including, inter alia, governmental and non-governmental; commercial and non-commercial; global, multilateral, regional or bilateral; and international cooperation among countries in all levels of development."

4. Indian Position

India is emerging as a serious player in the international commercial space market. Important issues of control and safety, authorization, agreements and dispute resolution mechanisms for space assets need to be addressed. The laws of contract, transfer of property, stamp duty, registration, copyright and patent among other relevant statutes must be revised to bring space related issues into the domestic laws. Provisions for participation of private satellite systems are permitted but there exists no legal regime to protect the operator and the government when liability happens in the case of damage. Domestic laws presently applicable, especially intellectual property right (IPR) laws have not been revised to include space related matters. India has a comprehensive remote sensing national policy, yet no national law. The current practice would run fine as of now, but there is a need to enact a specific law.

The current practice followed need to be re-examined particularly with respect to Article 51 of the Constitution of India. It should also be noted that the national space law should not be beneficial to only one side and should be balanced according to the industry. Since, the Indian Space Programme has always been beneficial to the nation, the national space law and legal regime should also be beneficial to the country in the future. Remote Sensing Data Policy, 2001 has provisions for acquisition and distribution, National

security, and satisfies the societal needs and developmental issues.

Later, Remote Sensing Data Policy, 2011 came into force and lifted restrictions on supply of satellite data up to 1m resolution getting clearance from the government's High Resolution Image Clearance Committee. National Remote Sensing Centre (NRSC) is the authority to acquire and disseminate satellite remote sensing data in India and for Indian and foreign satellites for development purposes. Government of India (GOI) has right to impose control when issues of national security and/or international obligations and/or foreign policies come into place. Implementation of the same policy in all situations (from the day of its announcement) and effectiveness (limited) arise many questions. For example, U.S Commercial satellite Imagery has ~ 0.5m resolution. Therefore policy, Act, treaty and authority must try to balance the need of user community and technology development.

As the technology develops, need and demand increase for higher resolution data and therefore there is need for a comprehensive space policy which can coordinate national and foreign satellite data. As far as Satcom policy is concerned (for example 95 of the 263 transponders used by domestic operators), the main objective and aim is to develop and thriving communication satellite and ground and service industries in India. Further development capabilities in the areas of satellites include launch vehicles and ground equipment's design. The norms, guidelines and procedures fall under three categories viz. use of INSAT capacity by non-governmental agencies, establishment and operation of Indian Satellite Systems, and use of foreign satellites for SatCom Services.

5. Implementation of legal framework

A number of space technologies have been transferred to the Indian industries in the areas of electronics, communication, optical and remote sensing data utilisation. In this regard the protection of intellectual property is important safeguard. The ISRO produces a variety of IP rights like patents, trademarks, data rights, copyrights, etc. Therefore, we necessitate having a legislation which will be broadly covering all these contemporary issues and matters related to space.

Our space legislation should incorporate (i) the legal issues connected to launch services (space transportation systems); (ii) the legal issues connected to satellite telecommunications, including satellite broadcasting; (iii) analyze issues associated to earth observation services as well as data processing and distribution; (iv) satellite navigational systems and (v) analyzes the intellectual property rights (IPR) regime and transfer of technology. There should be national treatment for issues including (i) Funding of space activity; (ii) Safety of space activity; (iii) Insurance; (iv) Licensing; (v) Certification of space technology; (vi) Liability for damage; (vi) Responsibility; (vii) Dispute resolution; (viii) Protection of IPR consequent to space activity; (ix) Promotion and financial support to

development of space sciences; (x) Protection of environment and ecology and (xi) International cooperation.

India which is developing at such a great pace in space and space related matters cannot afford to neglect a space legislation and if not, we will experience an enormous loss. The regulatory framework for space activities is defined by a combination of policies, procedures and guidelines of the Government of India. The salient ones among them include: a policy framework for satellite communications in India (a SATCOM policy for short); norms, guidelines and procedures concerning allowing Indian parties to provide services, including up-linking of TV signals with Indian satellites (SATCOM norms); Remote Sensing Data Policy, 2011; and the technology transfer policy of ISRO.

6. Conclusion

India's space technology is well developed and has shown capability to launch 20 satellites simultaneously in the space. Indian space needs to orient for a quantum jump in technological growth, adopt organizational models and collaborative strategies that will ensure economic efficiency. India must play an important role in creating a working conducive legal environment in the field of space, for balancing both public and private interests and for responding to evolving international environment. The Government of India, has approved and adopted a comprehensive Remote Sensing data policy (RSDP), for the acquisition and distribution of satellite remote sensing data from Indian and foreign satellites for civilian users in India, with basic aim to bring harmonious and early development of a national spatial data infrastructure.

United Nations (UN) has been negotiating with its member countries for a holistic, comprehensive space treaty that would take care of a number of emerging issues involved in space exploration. The plan to set up launch vehicle and spacecraft building facilities would be permitted to go in for 100% FDI (Foreign Direct Investment) can be useful as our present Prime Minister indicated. A holistic space act is also a necessity for India since India has been making all out efforts to exploit space technology to drive a range of developmental and governance activities in the country.

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