DEVELOPMENT OF SATELLITE TELECOMMUNICATION SERVICES: AT THE CROSSROADS OF INTERNATIONAL TRADE LAW AND INTERNATIONAL SPACE LAW

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1. INTRODUCTION

The initial impetus behind development of space technology and efforts at space exploration lay in the cold war rather than a desire to better our lives. However, whatever be the initial motivation, it soon became clear that space based applications can vastly transform our lives. In recent times, space technology has been used for myriad purposes. Satellite telecommunication is just one of the uses of space technology. Besides it, weather forecasting and disaster management heavily depends upon space technology. TIROS (Television and Infra- Red Observation Satellite) was the first satellite which was launched in 1960 for meteorological purposes and since then a number of satellites have been launched to provide information about rain, natural disasters, tsunami, earthquakes, cyclones, ocean tides, conservation, preservation and mapping of forests besides other uses.[1] Satellite technology is also used for remote sensing to study earth and its resources, search for precious metals and water bodies, record movement of iceberg, search and rescue

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[1] For details see http://science.nasa.gov/missions/tiros/, visited 08/22/20.

operations and pollution studies.[2] Satellite technology has been put to use for space exploration to gain vital insights into the functioning of the earth's atmosphere, creation of life and impact of space objects.[3]

Another key use of space technology is for navigation and positioning. Benefits from space technology have spilled over to other sectors like housing, medicine and lifestyle. Fire resistant technique are employed to develop new anti- fire suits for fire workers and light weight building material are used in making light weight support aids for disabled[4]. While these space technology applications have a positive impact upon our lives, on the flipside, space technology has been used for military uses which is a sad development and needs to be curtailed[5].

While it can be safely asserted that space technology applications have myriad uses and are a boon for mankind and of the various uses of space technology, one of the key application area is telecommunication.

2. DEVELOPMENT OF TELECOMMUNICATION SERVICES

The word telecommunication, (tele=distance), was created by Edouard Estaunie´ (1862–1942) in 1904 in his book Traite´ pratique de te ´le´communication electrique (te´le´graphie–te´le´phonie), in which he defined telecommunication as ‘‘information exchange by means of

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[2] For details see http://geography.about.com/od/geographictechnology/a/remotesensing.htm, visited 08/22/20.

[3] For details see http://teenink.com/nonfiction/academic/article/291248/The-Benefits-of-Space-Exploration-for-the-Safety-of-Humans-and-Ultimately-the-Survival-of-Mankind/, visited on 08/22/20.

[4] For details see http://www.pcworld.com/article/168557/10_apolloera_technologies_used_ today.html, visited on 08/22/20.

[5] It is also in violation to the provisions of the Outer Space Treaty and other International Space Law norms.

electrical signals."[6] The International Telecommunication Union (ITU) officially recognized the term telecommunications in 1932 and defined it as: "any telegraph or telephone communication of signs, signals, writings, images and sound of any nature, by wire, radio, or other system or processes of electric or visual (semaphore) signalling."

Radio transmission attained a new meaning with the inclusion of satellite transmission. The first artificial communication satellite was launched by Soviet Union in 1957 followed by launch of Echo 1 by United States.[7] In order to cater to demands of communication services on a commercial basis, Communications Satellite Corporation (COMSAT[8]) was formed in 1963. This was followed by International Telecommunications Satellite organization (INTELSAT) in 1964 and worldwide satellite services became a reality in 1969.

Future of space industry especially telecommunication via satellite is very bright. However, despite all these advancements, developments in telecommunication are not evenly spread. Internet and mobile penetration varies from country to country with vast inequalities offering wide scope for expansion and further development. The future would require concentrated steps in this regards so that the fruits of technological developments are enjoyed by all and sundry. Promotion of the benefits of advances of telecommunications to the nooks and corners of the world for enjoyment by the entire world community will change the way we live and experience our stay on this planet.

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6 The worldwide History of Telecommunications, Anton A. Huurdeman, 2003, John Wiley & Sons, Inc. pp.3. Also refer, History of Telecommunications, Md. Mosaddek Hossain Adib, available at http://www.academia.edu/224036/History_Of_Telecommunication, visited on 09/10/20.

7 For details see http://www.britannica.com/EBchecked/topic/524891/satellite-communication/224536/Development-of-satellite-communication, visited on 08/22/20.

8 U.S. Communications Satellite Act, 1934 provided for establishment of Communication Satellite Corporation which was entrusted with the task of commercial development of communication satellites.

3. LEGAL REGULATION OF SATELLITE TELECOMMUNICATION SERVICES:

The need for regulation of satellite telecommunication services is self-explanatory. Given the importance of these services to world economy and countries, it is expected that satellite telecommunication services will and is heavily regulated both at the international level and at the national level. A satellite telecommunication service finds itself as the subject of regulation under international space law. International space law consists of primarily the five UN space treaties and a number of UN General Assembly resolutions and set of principles. Many of these principles have been incorporated as treaties and many still remain as principles, which per se are non- obligatory. Also, we find the World Trade Organization (WTO) including satellite telecommunication services under the wider net of telecommunication services as tradeable services coaxing countries to open up their national borders for more free trade in such services. In order to facilitate this, a series of recommendations focussing primarily on competition law issues hindering free trade of telecommunication services have been put in place in the form of reference paper. Thus satellite telecommunication services are also regulated under the WTO regime. Along with it we have a number of International Satellite Organizations (ISO), International Telecommunication Union (ITU), International Telecommunications Satellite Organization (INTELSAT), European Satellite Communications Organization (EUTALSAT), and International Maritime Satellite Organization (INMARSAT) playing a vital role in regulation of satellite telecommunication services.

4. REGULATION OF SATELLITE TELECOMMUNICATION SERVICES UNDER INTERNATIONAL SPACE LAW

It was with the launch of Sputnik that need for international space law became clear. Being a new area demanding regulation, there was anticipation about the nature and scope of law applicable to space

activities. Amidst all this, United Nations took a commanding position and went on to pass a series of resolutions laying down a basic framework for regulating outer space activities. Some of these resolutions later went on to be absorbed as treaties. Besides the resolutions passed, there are five UN space treaties which form the bulk of international space law. These are:

(1) The 1966 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space including the Moon and Other Celestial Bodies (Commonly known as the "Outer Space Treaty").

(2) The 1967 Agreement on the Rescue of Astronauts the Return of Astronauts and the Return of Objects Launched into Outer Space. (Commonly known as the "Rescue Agreement").

(3) The 1971 Convention on International Liability for Damage Caused by Space Objects (Commonly Known as the "Liability Convention").

(4) The 1974 Convention on Registration of Objects launched into Outer Space (Commonly Known as the "Registration Convention").

(5) The 1979 Agreement Governing Activities of States on the Moon and Other Celestial Bodies (Commonly Known as the "Moon Agreement").

The treaties entered after the Outer Space Treaty elaborate upon the principles laid down under the Outer Space Treaty, which is regarded as the magna carta of outer space law coming into force in 1967. The Outer Space Treaty lays down the basic fundamental principles of outer space law and declares outer space to be the province of all mankind. A State is made responsible for its national space activities even if it is conducted by any private individual within the State. It introduces the concept of launching State and State of registry and regards astronauts as the envoys of mankind making it obligatory on States to render all possible assistance in case of accident, distress, emergency landing etc. It establishes the principle of use of outer space for peaceful purposes while calling upon the States to be cooperative with each other and render

mutual assistance in the exploration of outer space. The 1967 Treaty was followed by the Rescue Agreement. It entered into force on 3rd December 1968 and is an elaboration of Article V of the Outer Space Treaty.[9] The 1972 Liability Convention, based on the elaboration of Article VII of the Outer Space Treaty, is a very important convention laying down rules for pinning down liability on States for its space activities. The Registration Convention provides for dual registration. A space object has to be registered in the national registry of the launching State besides being registered in the registry maintained by the Secretary General of UN. The most contentious of the five UN space treaties, the Moon Agreement entered into force in 1984. According to Article 11 of the Moon Agreement, Moon and its natural resources are the Common Heritage of Mankind (CHM) mandating creation of an international regime for equitable sharing of the resources of the Moon and other celestial bodies.

Other than these treaty provisions there are also certain Principles which are particularly relevant to satellite telecommunication services. These are:

4.1 The Principle Governing the Use of Satellites for International Television Broadcast

Direct broadcasting by satellite has always been a contentious issue due to the debate over sovereign rights of a State to control information flow in its territory citing reasons of protection of cultural integrity amidst other reasons versus freedom of broadcasting stemming

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[9] Article V mandates States Parties to the Treaty to regard astronauts as envoys of mankind in outer space. States are to render to astronauts all possible assistance in the event of accident, distress, or emergency landing on the territory of another State Party or on the high seas. In case of astronauts making such a landing, States should safely and promptly return them to the State of registry of their space vehicle. Further, the Article puts a duty on astronauts of one State Party to assist astronauts of other State Parties while carrying out activities in outer space and on celestial bodies. States Parties have to inform the other States Parties or the Secretary-General of the United Nations of any phenomena discovered by them in outer space, including the Moon and other celestial bodies, which could constitute a danger to life or health of astronauts.

from right to freedom of information reiterated in human rights documents[10]. In 1982 the United Nations General Assembly by Resolution 37/92 adopted a Resolution on Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting.[11] The Principle gives upper hand to the "sovereign rights of States, including the principle of non-intervention"[12] giving States the power to regulate direct television broadcasting by satellite though it speaks of right of everyone to seek, receive and impart information and ideas[13]. Moving upon the concept of "prior consent" it provides that such activities should be carried out in a friendly and cooperative manner[14] while promoting free dissemination and mutual exchange of information particularly in the developing countries[15] and enhancing quality of life of

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[10] United Nations Educational, Scientific and Cultural Organization (UNESCO)'s Declaration of Guiding Principles on the Use of Satellite Broadcasting For the Free Flow of Information the Spread of Education and Greater Cultural Exchange under Article IX provides for direct satellite broadcasting to be made available to the population of countries other than the country of origin of transmission. An example of this debate can be found upon analysis of EU Regulations. European Convention for the Protection of Human Rights and Fundamental Freedoms as amended by protocols No.11 and 14, 1950 under Article 10 provides for States power of licensing of broadcasting, television or cinema enterprises while advocating right to freedom of expression. Article 4 of the European Convention on Transfrontier Television, providing about "Freedom of reception and retransmission" provides for freedom of reception and retransmission of programme services which comply with the terms of the Convention. European Agreement For The Prevention Of Broadcasts Transmitted From Stations outside National Territories, 1965 provides under Article 1 and 2 that establishing or operating of broadcasting stations on board ships, aircraft, or any other floating or airborne objects which transmit broadcasts within the territory of any Contracting Party to be punishable.

[11] UN Document A/37/PV.100 of 17 December 1982.

[12] Paragraph 1,

[13] Ibid.,

[14] Paragraph 3

[15] Paragraph 2

all people[16] and providing recreation[17]. The primary responsibility for activities in the field of international direct television broadcasting by satellites is put upon the States carrying on the activities or the States under whose jurisdiction such activities are carried upon.

4.2 The Principle of Universal Access to Satellite Telecommunication Service

The Principle of Universal Access[18] to Satellite Telecommunications Services was adopted by the UN General Assembly under its Resolution 1721(D) in 1961. It provides that "communication by means of satellites should be available to the nations of the world as soon as practicable on a global and non-discriminatory basis." Provisions of universal service are available under almost all jurisdictions. Universal Service Directive of EU provides for delivery of universal service of telecommunication sector while reflecting advances in technology, market developments and changes in user demand.[19]

4.3 The Principles Relevant to the Use of Nuclear Power Sources in Outer Space

The importance of the Principle is laid down in the Preamble [20] which recognizes use of nuclear power sources in some outer space missions due to its compactness, long life and other attributes. The goal of the Principle is to make States launching space objects with nuclear

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[16] Ibid.,

[17] Ibid.,

[18] Universal service means the provision of a defined minimum set of services to all end-users at an affordable price (Paragraph 4 of Directive 2002/22/EC of the European Parliament and of the Council on Universal service and user's rights relating to electronic communications networks and services.

[19] under paragraph 1, ibid.,

[20] UN General Assembly Resolution 47/68, adopted in 1992

power sources on board responsible for protection of individuals, populations and the biosphere against radiological hazards.[21] Use of nuclear power sources in outer space is to be carried out in accordance with international law, including in particular the Charter of the United Nations and the Outer Space Treaty.[22] States are to bear international responsibility for national activities involving the use of nuclear power sources in outer space, whether such activities are carried on by governmental agencies or by non-governmental entities.

4.4 The Principles Relating to International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of all States

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 was adopted on 13 December 1996[23]. Preamble to it calls for exploration and use of outer space for the benefit and interest of all countries, irrespective of their degree of economic or scientific development. Principle 3 calls States with relevant space capabilities and with programmes for the exploration and use of outer space to contribute on an equitable and mutually acceptable basis. Particular attention is to be given to the interests of developing countries and countries with incipient space programmes carrying out activities with cooperation of advanced space faring States. Principle 4 provides that 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;

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[21] Principle 3(1)(a) Guidelines and criteria for safe use

[22] Principle 1. Applicability of international law

[23] UN General Assembly Resolution A/RES/51/122

global, multilateral, regional or bilateral; and international cooperation among countries in all levels of development.

5. REGULATION OF SATELLITE TELECOMMUNICATION SERVICES UNDER WORLD TRADE LAW

Traditionally, telecommunication services have been regarded as vital to a country's economy making it necessary for the government to have a tight control over it. However, since late 1990s, there has been an increasing thrust on opening up market. The 1997 WTO Agreement on Telecommunications was a step in this regard[24]. Telecommunication services were defined as "tradeable" and a distinction between basic and value added service was drawn up. Out of the total of fifteen services put for talks, basic services included all telecommunication services, both public and private that involve end-to-end transmission of customer supplier information. Basic services included voice telephone service, packet- switched data transmission services, circuit- switched data transmission services, telex service, telegraph service, facsimile services and private leased circuit service.[25] Value added services are those to which some value is added to the customer's information by the supplier either by enhancing its form or content or by providing for its storage and retrieval. These included electronic mail, on-line information and database retrieval, electronic data interchange, enhanced facsimile

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[24] It was felt that it is essential to bring in telecommunication services under the WTO regime because being a huge sector itself, it is also the backbone of other sectors. Paragraph 1 elaborating upon the 'Objectives' of the Annex on Telecommunication provides, "Recognizing the specificities of the telecommunications services sector and, in particular, its dual role as a distinct sector of economic activity and as the underlying transport means for other economic activities".

[25] For details see http://www.wto.org/english/tratop_e/serv_e/telecom_e/telecom_e.htm, visited on 08/22/20.

service, code and protocol conversion, on-line information and/or data processing[26].

The trade rules that apply to telecommunications services include the framework articles of the General Agreement on Trade in Services (GATS). In addition, GATS also contains an Annex on telecommunications which guarantees reasonable access to and use of public telecommunications, in a given market, by suppliers of all services benefiting from commitments scheduled by the member concerned[27]. Besides this, there is the Reference Paper, which is a set of regulatory principles, legally binding for those WTO governments which have committed to it by appending the document, in whole or in part, to their schedules of commitments.[28]

Besides the obligations under GATS, we have the Annex which requires Members to ensure that all service suppliers entitled to provide services under the scheduled commitments are accorded access to and use of public basic telecommunications, both networks and services, on reasonable and non-discriminatory basis.[29] The liability incurred under this Annex is irrespective of any scheduled commitments in telecommunications sector undertaken by a member. We also have the Reference Paper which is a set of regulatory principles to be considered by Member States while submitting their schedule of basic telecommunications commitments.

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[26] For details see http://www.wto.org/english/tratop_e/serv_e/telecom_e/telecom_coverage_e.htm, visited on 08/22/20.

[27] http://www.wto.org/english/tratop_e/serv_e/12-tel_e.htm, visited on 08/22/20.

[28] www.wto.org/english/tratop_e/serv_e/s_negs_e.htm

[29] http://www.wto.org/english/tratop_e/serv_e/12-tel_e.htm, visited on 08/22/20.

6. GENERAL LEGAL PRINCIPLES APPLICABLE TO SATELLITE TELECOMMUNICATION SERVICES

Analysis of UN Space treaty provisions and the provisions of GATS, Annex on Telecommunications and the Reference Paper provides us with certain key legal principles, which are applicable to satellite telecommunication services. These are:

6.1 Principle of Cooperation

The principle of cooperation in outer space activities is deeply embedded in the UN space treaties. We also find reference to technical cooperation in the Annex on telecommunication.[30] The preamble to Outer Space Treaty provides that "international cooperation in the scientific as well as the legal aspect of the use of outer space" will "contribute to the development of mutual understanding" and "strengthening of friendly relations between States and people"[31]. The Astronauts Agreement also mentions promotion of international cooperation as its aim.[32]

6.2 Principle of Non-Appropriation of Outer Space

Principle of non-appropriation/ no sovereign rights over outer space including Moon and other celestial bodies finds reference in Outer Space Treaty. Preamble of the Treaty recognizes "common interest of all mankind in the progress of the exploration and use of outer space". The Treaty designates outer space to be the province of all mankind making it free for exploration and use by all States without discrimination on any ground on the basis of equality. It further elaborates upon the right of

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[30] Section 6.

[31] Preamble, Outer Space Treaty.

[32] Preamble, Astronauts Agreement.

States to have free access to all areas of celestial bodies.[33] While the space treaty provisions have put in the principle of non-appropriation worded as "province of mankind" and "common heritage of mankind", State parties have control over their spacecraft and other equipment's.

6.3 Responsibility and Liability for activities in Outer Space

Another very important principle applicable to satellite telecommunication services is the principle of State responsibility and liability for activities carried out by it in outer space[34]. Article VI and VII of the Outer Space Treaty are very vocal in this regard and lay down the ground rule. This State responsibility is irrespective of such activities being carried out by governmental agencies or non- governmental agencies. A key convention in this regard is the Liability Convention[35] which is devoted wholly to the fixation of State liability for the activities of the State in outer space. Liability Convention establishes a two tier liability system providing for absolute liability and fault based liability.

6.4 Most Favored Nation Treatment (MFN)

Article II of GATS obliges a State to "accord immediately and unconditionally to services and service suppliers of any other Member

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[33] Article I, Outer Space Treaty. Article II further clarifies and declares that "outer space, including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means."

[34] State responsibility requires the existence of an internationally wrongful act whereas international liability exists regardless of unlawfulness of the activity. For international liability, there is no requirement of breach of any obligation. The only essential requisite is an appreciable harm. State liability is not dependent upon fault, intention or negligence. For details see State Responsibility And int. Liability Under Int. Law, Sampong Sucharitkul, 18 Loy. L.A. Int'L & Comp. L.J. 821 1995-1996.

[35] Provisions of this convention do not prevent States from entering into international agreements with other States reaffirming, supplementing or extending its provisions (Article XXIII)

treatment no less favourable than that it accords to like services and service suppliers of any other country." This is known as the MFN system. Under the MFN system if a State party gives a preferential treatment to another State party in a particular service sector, it has to extend that preferential treatment to all other member States. Thus if a country extends a particular benefit to a particular country, it has to extend that benefit to all other countries which are parties to GATS.

6.5 Transparency

Article III of GATS provides for transparency in three levels. Firstly, every WTO Member has to publish any measure of general application which can affect the operation of GATS; secondly, every WTO member has to inform the Council on Trade in Services (GATS Council) about any measures taken which can significantly affect trade in services covered by its specific commitments. This has to be done on a periodic basis.

6.6 Reduction and Elimination of Non-Tariff Barriers in Domestic Regulations

Article VI of GATS calls for reduction and elimination of non-tariff barriers in domestic regulations. For this purpose, it provides that the domestic regulations must be administered in a reasonable, objective and impartial manner. It also mandates that Member States should establish judicial, arbitral or administrative tribunal or procedure for review of any administrative decision affecting trade in services. Besides this, GATS Council is to work towards eliminating unnecessary barriers to trade specifically relating to qualification requirements, procedures, technical standards and licensing requirements.

6.7 Prevention of Anti-Competitive practices

GATS Article VIII prevents anti- competitive practices such as "abuse of monopoly position". In respect of other business practices which may restrict trade in services States are to give "full and sympathetic consideration" to the request for consultation made by another WTO member. States are to cooperate and supply publicly available, relevant non- confidential information to the other State.

6.8 Market Access

Article XVI of GATS provides for market access obligation. It provides that States should allow other members to provide services through all four modes of supply according to the commitments made by them. This obligation is subject to the specific commitment made by a country in its schedule. Also, States are to avoid putting up limitations, restrictions other than those provided in the Schedule. For telecommunications services, market access obligation spells out two things. Firstly, if the State puts a restriction on the modes of supply it has to specifically put so in its schedule and secondly, as for telecommunication services, the most two important modes are the cross border supply and commercial presence in another state, if a State wants to put restrictions on trade in telecommunication services, these are the two modes the State will try to control.

6.9 National Treatment

This is a specific commitment under GATS and has to be put by a State in its schedule of specific commitment. The details of the format and other intricacies of the Schedule have been provided under Article XX:1 and XX:2, GATS. When we talk about national Treatment, it does not always signify identical treatment, there can be formally different treatment without violation of National Treatment obligation if the end result does not harmfully affect the foreign supplier.

7. CONCLUSION

The benefits of space technology, in various sectors have been widely accepted. Of the different uses of space technology, use of space technology to provide satellite telecommunication service is one of the most important one. Satellite telecommunication services have huge trade potential and hence it became necessary to bring it within the WTO forum. At the same time, by virtue of being a space based service, international space law principles are applicable to it. A synthesis of these two disciplines gives us a body of law which in totality regulates satellite telecommunication services. Some of these principles stem from international space law and some from international trade law. In the long run, the origin of the principle should not matter for both international trade law and space law should work in harmony to regulate satellite telecommunication services.