THE LEGAL ASPECTS OF ACCESS TO THE GEOSTATIONARY ORBIT

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SOMMAIRE

L'objet principal de l'accès à l'orbite géostationnaire est de concilier la liberté d'accès inhérente a tout régime *Res communes* avec un partage équitable des avantages d'accès à l'orbite géostationnaire. À ce point dans l'espace, la possibilité d'interférence entre deux satellites ou plus requiert une coordination considérable et demande souvent une configuration optimale des systèmes de satellite de communication.

Le traite de l'espace a posé les principes de base de la loi internationale applicable à l'espace: le principe d'intérêt commun, le principe de non appropriation et le principe de la liberté.

L'U.I.T. a adopté deux systèmes de réglementation qui régissent l'accès et l'usage de l'orbite géostationnaire : le régime du premier arrivé, premier servi (règle générale), et le plan *a priori* (exception).

Nous verrons également la législation des États-Unis, le pays avec le plus grand nombre de satellites en orbite géostationnaire, en cette matière. Au niveau domestique, les Etats-Unis ont adopté la politique d'entrée libre qu'ils seront en mesure de maintenir au point où l'approche internationale de l'administration de l'orbite/spectre assurera la disponibilité des missions de satellite demandées. Au niveau international, les Etats-Unis sont responsables du système de satellites de communication globale (INTELSTAT). Cependant, des tendances à la déréglementation dans le marché des satellites et les decisions de la CFC ont donné lieu à la politique inter-frontière (transborder) et à la politique des systemes separés.

The main issue affecting the access to the geostationary orbit is how to reconcile freedom of access, inherent in any res communes regime, with equitable sharing of accessed benefits in the geostationary orbit, where the high potential for mutual interference among two or more satellites requires extensive coordination and often entails compromise of optimal configuration for telecommunication satellite systems.

The Outer Space Treaty has established the basic principles of international law applicable to outer space: the common interest principle; the non-appropriation principle; the freedom principle.

The ITU has adopted two regulatory regimes that govern the access and use of the geostationary orbit: the first-come, first-served regime (general rule); and the a priori plans (exception).

The legislation of the US, a country with the largest number of satellites in the geostationary orbit, is discussed. At the domestic level, the US has adopted the open entry policy, which it will be able to maintain to the extent that the international approach to orbit/spectrum management provides for continued availability of requested satellite assignments. At the international level, the US is committed to the global communications satellite system (INTELSAT). However, deregulatory trends in the satellite market and the rulings of the FCC developed the transborder policy and the separate systems policy.

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CHAPTER I : INTRODUCTION

The geostationary orbit is the orbit, a satellite placed in which revolves around the Earth with the same speed as of the rotation of the Earth and thus appears to remain stationary over a given point on the surface of the Earth. It becomes useful only when a satellite is placed in it. The nominal altitude of the geostationary orbit above the earth's equator is 35,786 km and the period of revolution of a geostationary satellite is 23 hours and 56 minutes.[1]

The geostationary satellite has a constant view of about 40 percent of the Earth's surface and is continuously visible from any point within that area, therefore allowing for continuous transmission. Only three such satellites are necessary to cover the entire surface of the Earth, with the exception of regions above latitude 75° South or North.

The major use of the geostationary orbit is for telecommunication satellites. More than 95 percent of these satellites are in the fixed-satellite services.

Other satellites which use the geostationary orbit include meteorological, surveillance and space research satellites. Their numbers are few, and none present significant prospects for congestion of the geostationary orbit/spectrum resource.[2]

The geostationary orbit is a limited natural resource.[3]

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1. Jakhu, R., The Legal Regime of the Geostationary Orbit, D.C.L. Thesis, McGill University, 1983 at p. 1-2.

2. Smith, M.L., Space WARC 1985: the Quest for Equitable Access, Boston University Int. L.J., 1985, 229 at p. 230.

3. ITU Convention, Art. 33.

Two factors constrain the capacity of the geostationary orbit.[4] First, as it is an area of limited volume, there is a physical limit to its use. Due to orbital variations resulting from natural factors like the elipticity of the earth's equator, the gravitational attraction of the Sun and Moon, and solar radiation, a satellite will tend to drift in longitude, moving north and south of the equator in a figure-eight pattern. To counter this drift, satellites are designed with station-keeping systems on board. These systems keep the satellite in the desired position within the orbit. Since most contemporary satellites can maintain their position within plus or minus 0.1 degree of longitude, a minimum of 0.2 degree of separation is required between nominal orbital positions to avoid collision.[5]

The second constraint on the orbit capacity is imposed by the radio spectrum. Only a limited portion of the radio spectrum is suitable for the geostationary satellite service.[6] This fact, coupled with the regulatory constraints on the frequencies satellite can use, and the possibility of interference between satellite systems using the same frequency band, further restricts the capacity of the geostationary orbit.[7] Moreover, satellites for communications between two given points on Earth have a preferred location since they must be in a position to "see" the area which they are required to serve.

It is impossible to state how many satellites can be accommodated in the

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4. Wihlborg, C.G. and Wijkman, P.M., Outer Space Resources in Efficient and Equitable Use: New Frontiers for Old Principles, XXIV(1), Journal of Law and Economics, 1981, 23 at p. 26-28.

5. White, R.L. and White Jr., H.M., The Law and Regulation of International Space Communication, Artech House, 1988 at p. 11-12.

6. Supra, footnote 1, at p. 7.

7. Supra, footnote 2, at p. 232.

geostationary orbit.[8] Its capacity to accommodate various satellites depends upon a number of technical factors such as radio frequencies used, bandwidth, the type of satellite service and its general traffic configuration, transmitted power, modulation techniques, receiver sensitivities, areas on the earth to be served, etc.[9]

The geostationary satellite orbit is not uniformly populated, nor is it likely to be so in the future. Still, those portions of the orbit that serve large areas of heavy communication traffic are virtually full with respect to the typical communication satellite, one that operates in the C band with unpolarized transmission covering the entire area of visibility. The more populous portions of the geostationary orbit include the areas of the geostationary arc serving North America from about 135 degrees west to 87 degrees west longitude, the area over the Atlantic Ocean serving Western Europe from about 1 degree west to 35 degrees west longitude and the area over the Indian Ocean serving Eastern Europe and the USSR from about 49 degrees east to 90 degrees east longitude.[10]

Access to the geostationary orbit is achieved through a variety of institutional alternatives. These include international, regional and domestic systems.

At the global level, INTELSAT, INTERSPUTNIK and INMARSAT provide telecommunication services.

At the regional level, EUTELSAT, PALAPA and ARABSAT provide

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8. Smith, M.L., International Regulation of Satellite Communication, Kluwer Academic Publishers, 1990.

9. Supra, footnote 1, at p. 37.

10. Supra, footnote 5, at p. 14.

regional and domestic satellite telecommunication services. Other regional systems have been proposed in Latin America (project CONDOR), Africa (RASCOM), Caribbean (CARISAT) and Asia (ASIASAT).[11]

Countries with their own satellite systems serving domestic telecommunication needs include: The US, the USSR, Canada, Australia, Brazil, China, France, India, Indonesia, Italy, Japan, Mexico, the UK, West Germany.[12]

The first commercial geostationary satellite Intelsat I, also known as Early Bird, was launched in 1965.[13] At that time little thought was given to the efficient management of the geostationary orbit. The preamble of the interim intergovernmental Agreement, for example, refers to "the best and most equitable use of the radio spectrum", but does not mention the geostationary orbit. By the early 1970s, when the permanent agreement[13] had entered into force, use of the orbit by Intelsat and domestic and regional systems had progressed to an extent sufficient to sensitize the organization to the scarcity and consequent value of that resource. Indeed, the new intergovernmental agreement refers in its preamble to "the best and most equitable use of the radio frequency spectrum and orbital space".[14]

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11. Ospina, S., The IV and WARC-ORB: Will the revised radio regulation result in a Sui-Generis Legal Regime for the GSO, 32, Colloquium, 1989, 247 at p. 251.

12. Supra, footnote 8, at p. 35.

13. Hudson, H.E., Communication Satellites, Their Development and Impact, Collier Macmillan Publishers, 1990 at p. 252.

13.A The Agreement Relating to the International Telecommunications Satellite Organization 'Intelsat", 23:4 U.S.T. 3813 (1972).

14. Snow, M.S., The International Telecommunications Satellite Organization (Intelsat), Nomos Verlagsgesellschaft Baden-Baden, 1987 at p. 78.

While no country has ever been denied access to the geostationary orbit, some countries have had difficulties in adapting their proposed satellites to existing assignments.[15] In replying to an IFRB Circular Letter requesting comments on difficulties they had experienced in applying the ITU regulatory procedures, France, India and Mexico indicated that they had encountered the same problems.[16]

The UN and the ITU are the major international fora through which the regulatory regime governing access to and use of the geostationary orbit is established. Additionally, member states of Intelsat and Inmarsat have also undertaken to coordinate their use of the orbit/spectrum with these organizations.

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15. Doyle, S.E., Regulating the Geostationary Orbit: ITU's WARC-ORB-85-88, J. Space L., 1987, 1 at p. 7.

16. ITU, Report of the IFRB to the WARC on the Use of the Geostationary-Satellite Orbit and the planning of the Space Services Utilizing it (1984) (appended to IFRB Circular Letter No. 600, Dec. 10, 1984, and attached to WAR-ORB-85, Dec. 4) at p. 77-81.

CHAPTER II : ACCESS TO THE GEOSTATIONARY ORBIT BY STATES

A. International Space Law

1. A boundary between airspace and outer space

When the first satellite was launched in 1957, the literature on international space law aduced four arguments to justify the legality of such launchings:

> "1) The international understanding within the framework of the International Geophysical Year that artificial Earth satellites would be launched;
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> 2) The tacit consent of states to the launching of satellites, born out by the absence of protest on their part against such launchings;
>
> 3) The recognition of the proposition, by the vast majority of states, that national sovereignty does not extend to the regions of satellite orbits and, hence, the recognition of the right of states to launch satellites regardless of the consent of other states; and
>
> 4) The conviction that satellite flights are a new type of activity to which the rules of international and national air law do not apply."[1]

A first clarification of the legal status of outer space was provided in U.N. General Assembly Resolution 1721 (xvi) of 1961[1], which affirmed the applicability of international law, the freedom-principle and the non-appropriation rule. A more extensive affirmation was subsequently contained in the Declaration of

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1. Zhukov, G.P., International Space Law, Praeger Publishers, 1984 at p. 43.

1.A U.N.G.A. Res. 1721 (xvi) International Co-operation in the Peaceful Uses of Outer Space (20 Dec. 1961).

Legal Principles of 1963.[1] The 1967 Outer Space Treaty[1] further developed these principles making them legally binding rules. Its basic principles, including those concerning the status of outer space, can be regarded as forming part of customary international law, thereby binding on all states regardless of their participation in the treaty.[2]

The Outer Space Treaty is intended to govern the activities of states in outer space, including the moon and other celestial bodies. However, the Treaty does not define the term "outer space".

There are different views on the question of determining where outer space begins. They can be broadly divided into three groups:

1) "Wait-and-seers" who consider that the time for establishing a line separating outer space and airspace is not yet ripe. They argue that the international community has not yet adequately examined the multitude of scientific, technical and political factors that are relevant to meaningful definition; that if such a boundary had been previously established it would have either delayed or permanently inhibited many current space activities; that most countries are not able to monitor such an altitude frontier.[3]

1.B U.N.G.A. Res. 1962 (xviii) Declaration of Legal Principles Governing the Activity of States in the Exploration and Use of Outer Space (13 Dec. 1963).

1.C Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space including the Moon and Other Celestial Bodies, 610 U.N.T.S. 206 (1967).

2. Matte, N.M., (ed.), Space Activities and Emerging International Law, CRASL, McGill University, 1984 at p. 317-318.

3. Cheng, B., The Legal Regime of Airspace and Outer Space: The Boundary Problem. Functionalism versus Spatialism: the Major Premises, v. A.A.S.L., 1980, 323 at p. 327.

2) Spatialists, who believe in the need of some geographical or territorial delimitation of air space from outer space. Among them, there are various suggestions as to the criteria to be used: the atmosphere, the maximum altitude of aircraft flight, Von Karman line, the lowest perigee of an orbiting satellite, the earth's gravitational effects or effective control.[4]

3) Functionalists who consider it adequate for international law to regulate space flights simply by reference to the nature of the activity, or the nature of the vehicle. According to them the locus of the act is irrelevant. This view is contrary to the basic framework of the international legal system, under which functional classification of activities of states into those that are lawful and those that are unlawful follows, and not precedes, spatial delimitation.[5]

General international law assumes that the world will be divided spatially into three different categories of territory, namely:

1) National territory - over which one state exercises territorial sovereignty, to the exclusion of all others;

2) Territorium extra commercium - territories which cannot form territory of a state;

3) Territorium nullius - territories which are not under the sovereignty of a recognized subject of international law, but which are capable of being acquired by any state in accordance with the rules of international law governing acquisition of territory. They are merely not yet the territory of any state.

Under general international law outer space is res extra commercium,

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4. Christol, C.Q., The Modern International Law of Outer Space, 1982 at p. 448.

5. Supra, footnote 3, at p. 338.

while celestial bodies are res nullius. The 1967 Outer Space Treaty has turned the whole of outer space, including the moon and other celestial bodies into res extra commercium.

A new category of territory, the common heritage of mankind, has been introduced into international law by the 1979 Moon Treaty. The emergent concept of common heritage of mankind exists only at the level of treaty law. While it still lacks precise definition, it wishes to convey the idea that the management, exploitation and distribution of the natural resources of the area in question are matters to be decided by the international community and are not to be left to the initiative and discretion of individual states or their nationals.[6]

The Moon Agreement applies to all celestial bodies within the solar system, other than the Earth; and orbits around or other trajectories to or around them.[7] Therefore, the common heritage of mankind does not apply to the geostationary orbit.[8]

States appear to be in agreement that upper limit of airspace does not lie outside the lowest perigee of any satellite so far placed in orbit. With few exception, the lowest perigee achieved so far is 110 km.[9] Since geostationary satellites orbit at heights of about 35,800 km, there can be no doubt that the geostationary orbit is in outer space. The legal validity of this statement had

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6. Ibid at p. 337.

7. Agreement Governing the Actiities of States on the Moon and Other Celestial Bodies, 1979, art. I.

8. Matte, N.M., The Common Heritage of Mankind and Outer Space: Toward for Survival, XII, A.A.S.L., 1987, 313 at p. 323.

9. Supra, footnote 3, at. p. 356.

not been challenged until the claims of equatorial states.[10]

2. The Bogota Declaration

In 1976, eight equatorial countries adopted the Bogota Declaration[11] which asserts that segments of the geostationary orbit lying above their territories are an integral part of the territory over which the equatorial countries exercise complete and exclusive sovereignty. The arguments advanced in the Bogota Declaration are based on the following consideration: the geostationary orbit is a physical fact arising from the nature of our planet because it depends exclusively on its relation to gravitational phenomena caused by the earth; there is no satisfactory definition of outer space to support the argument that the geostationary orbit is included in outer space; and consequently, the geostationary orbit is not covered by the Outer Space Treaty.

Claims of the equatorial countries could not be supported either on scientific or legal grounds.

The geostationary orbit is a natural phenomenon resulting from various natural forces, gravity being only one. It is the gravitational force of the Earth as a whole that is necessary for the creation and existence of the geostationary orbit.[12]

The Outer Space Treaty was negotiated in order to establish principles

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10. Gorove, S., The Geostationary Orbit: Issues of Law and Policy, American J. of Int. L., 1979, 444 at p. 447.

11. Jasentuliyana, N. and Lee, R.S.K. (eds.), Manual on Space Law, Vol. II, p. 383.

12. Jakhu, R., The Legal Regime of the Geostationary Orbit, D.C.L. Thesis, McGill University, 1983 at. p. 77-78.

that govern man's activities in outer space. These activities, before and at the time the Treaty was concluded, related mostly to experiments conducted with artificial earth-orbiting satellites. Therefore, implementation of the 1967 Treaty is possible on the assumption that its provisions concern those regions of space in which the artificial earth satellites are placed. The acceptance of an opposite assumption would deprive the 1967 Treaty of a reason for its existence.[13]

Customary international space law allowing for free and equal use of and free access to the space environment had existed prior to the codification of these principles in the 1967 Treaty. Some 80 space objects had been placed in the geostationary orbit before any protest had been raised.[14]

All satellites in the geostationary orbit use the radio frequencies allocated to space services in the Radio Regulations.[14] This implies that member states of the ITU (including states parties to the Bogota Declaration) recognize and accept the fact that all satellites are in outer space.[15]

The great majority of states, including all major space powers, are of the opinion that the geostationary orbit is an integral part of outer space.[16]

In light of severe criticism, there is a change of attitude on the part of some equatorial states. They start accepting that the geostationary orbit is part

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13. Gorbiel, A., The Legal Status of Geostationary Orbit; Some Remarks, 6, J. Space L., 1978, 171.

14. Supra, footnote 4, at p. 479.

14.A Radio Regulations, ITU, 1982 as amended.

15. Supra, footnote 12, at p. 87.

16. Supra, footnote 2, at p. 23.

of outer space.[17]

3. The Outer Space Treaty

(i) The Common Interest Principle

When the Outer Space Treaty was adopted, there was a widespread feeling that the rules of the Treaty went beyond the familiar framework of ideas by which international relations, up to the time of the conquest of outer space, were governed. This feeling was primarily based on Article 1(1) of the Outer Space Treaty, according to which "the exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind.[18]

An interpretation of the benefit provision in a sense which would oblige states to share every advantage, every profit, every value flowing from their space activities with every other state, would mean that states, under the terms of the Treaty, had surrendered vital sovereign powers, that they had agreed to an alteration of universally acknowledged responsibilities in matters of defense and foreign affairs and consequently to a fundamental change in the political structure of international society.[19] However, international space law, having prohibited the extension of territorial sovereignty to outer space, including the

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17. Jakhu, R., The Legal Status of the Geostationary Orbit, vii, A.A.S.L., 1982, 333 at p. 343-344.

18. Goedhuis, D., Some Recent Trends in the Interpretation and the Implementation of the Rules of International Space Law, Columbia J. of Transnational Law, 1981, 213 at p. 213.

19. Ibid, at p. 221.

Moon and other celestial bodies, still regulates relations between states with regard to their space activities with full respect for the state sovereignty principle.[20]

Realistically, cooperation in space cannot develop independently of earth politics. National rivalries are at the core of international politics. Manoeuverings among states to protect their national interests continue undiminished and are evidenced even in the negotiations which led to the space treaties already in force and in the interpretations of their provisions.[21]

The genuine legal meaning of the "common interests" rule is that the use of space objects should not be detrimental to other states; it should not infringe foreign national interests which are protected under international law (i.e., national security and defence, public order, sovereignty over natural resources, telecommunication over national territory).[22]

The Outer Space Treaty contains restrictions on the duty to cooperate in the more specific fields of co-operation. For example, during the negotiation of the Outer Space Treaty, the Soviet Union proposed a most-favoured-nation clause on the grant of tracking facilities, and based it on the principle that the exploration of outer space should be carried out in the interest of all mankind.

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20. Vereshchetin, V.S., On the Principle of State Sovereignty in International Space Law, 17, Indian J. of Int. L., 1977, 203 at p. 203.

21. Meyers, D.S., "Common Interest" and "Non-appropriation" in Outer Space: Political Interpretation of Legal Principles, International Relations, 1979, 529 at p. 538.

22. Markoff, M.G., Implementing the Contractual Obligation of Art. I(1) of the Outer Space Treaty 1967, xvii, Colloquium, 1974, 136 at p. 137.

It was not acceptable to other states.[23] The result is Article X which obliges contracting states to consider such requests on a basis of equality, but leaves the nature and conditions of the observations to the agreement between the states concerned. Furthermore, Article XI requires states parties to the Treaty conducting activities in outer space, including the moon and other celestial bodies to inform the Secretary-General of the U.N. as well as the public and the international scientific community, to the greatest extent feasible and practicable, of the nature, conduct, locations, and results of such activities. Each state is left to its own determination of when to submit such information. Under article XII of the Outer Space Treaty all stations, installations, equipment, and space vehicles on the moon and other celestial bodies shall be open to representatives of other states parties to the Treaty, on the basis of reciprocity.

Therefore, it would be against the logic inherent in a Treaty's structure to construe the abstract clauses of co-operation more broadly than those individual norms of co-operation which have been included explicitly in the Treaty and which generally are covered by the subject-matter addressed by the abstract co-operative clause. The degree of cooperation expected under the broad co-operative clause does not exceed the degree of co-operation which the parties have accepted in those areas where more specific forms of co-operation have been agreed upon. The practice of states is in accordance with this view.[24]

Any specific obligations for international co-operation would have to be

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23. Adams, T.R., The Outer Space Treaty: An Interpretation in Light of the No-Sovereignty Provision, 9(1), Harvard International Law Journal, 1968, 140 at p. 144.

24. Dolzer, R., International Co-operation in Outer Space, 45(3), Zaörv, 1985, 527 at p. 539-540.

based on further specific agreements, not on an interpretation of Article I(1).[25]

While all states who conduct space activities are willing to co-operate, the developing countries have found that these states have not gone far enough in their co-operation. Developing countries have called for a legal regime which would define the nature of such international space co-operation and stipulate the degree to which the benefits derived from space activities should be shared.[26] However, such calls have not received the support of the developed countries, as they do not wish to be put in a position where they cannot choose which programme to open to co-operation and what information they are to share with developing countries.[27] They are likely to co-operate if they can be convinced that it is economically or socially beneficial to them to do so.[28]

The benefits from space telecommunication have inured to the vast majority of countries of the world. The Intelsat system is aimed at providing, on a non-discriminatory basis, public international telecommunications services to all countries, thereby implementing article I(1) of the Outer Space Treaty. A number of policies adopted by Intelsat have helped its developing members. The overall practice of average - cost pricing has protected them from some of the harsher pricing realities that would result from the disaggregation of tariff policy and the alignment of costs with prices service by service. Furthermore, long-term leases of Intelsat transponders for domestic service have been available

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25. Jasentuliyana, N., Article I of the Outer Space Treaty Revisited, J. Space L., 1989, 129 at p. 144.

26. Supra, footnote 25, at p. 129.

27. Ibid, at p. 143.

28. Ibid, at p. 144.

to all Intelsat members since the early 1970's. Finally, in recent years Intelsat has introduced numerous demonstration aid and training programmes which have primarily involved developing countries.[29]

(ii) The Non-Appropriation Principle

Article II of the Outer Space Treaty prohibits national appropriation of outer space, including the moon and other celestial bodies, by claims of sovereignty, by means of use or occupation, or by any other means. The Treaty did not create this principle, but codified already existing consensus.[30]

The purpose of article II of the 1967 Treaty was to prohibit a repetition of the race for the acquisition by claims of national sovereignty of overseas territories.[31]

The term "appropriation" denotes the taking of property for one's own or exclusive use with a sense of permanence.[32] Therefore, every use of the geostationary orbit is legitimate provided that it does not exclude others permanently from such use.[33]

Whereas under the terms of the Outer Space Treaty the appropriation of areas of outer space is prohibited, the Treaty has not prohibited the

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29. Snow, M.S., Evaluating Intelsat's Performance and Prospects, Telecommunications Policy, February 1990, 15 at p. 19.

30. Goedhuis, D., Influence of the Conquest of Outer Space on National Sovereignty; Some Observations, 6, J. Space L., 1978, 37 at p. 40.

31. Jakhu, R., The Principle of Non-Appropriation of Outer Space and the Geostationary Orbit, xxvi, Colloquium, 1983, 21, at p. 22.

32. Gorove, S., Interpreting Article II of the Outer Space Treaty, Fordham Law Review, 1969, 349, at p. 352.

33. Supra, footnote 31, at p. 23.

appropriation of the natural resources of that space.[34]

The concept of non-appropriation embodied in Article II means that as among the contracting states, none will be entitled to exercise territorial jurisdiction over any part of outer space or celestial bodies.[35] The prevailing jurisdiction in outer space and on celestial bodies will be the quasi-territorial jurisdiction of the state of registry of objects launched into outer space.[36] Inasmuch as there is to be no territorial jurisdiction, there can be no private ownership of parts of outer space or celestial bodies, which presupposes the existence of a territorial sovereign itself competent to confer titles of such ownership. In this sense, outer space and celestial bodies are not only not subject to national appropriation, but also not subject to appropriation under private law.[37]

During the negotiation of the Outer Space Treaty, it was suggested that the semi-permanent occupation of parts of outer space and celestial bodies for purposes of exploitation will pose problems which require further study and further regulation.[38]

Discussions in the Legal Sub-Committee of the COPUOS show that delegates have divergent views on the need to formulate a special regime to

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34. Goedhuis, D., Some Legal Aspects of the Use of Communication Satellites, xvii, Colloquium, 1974, 53, at p. 56.

35. Cheng, B., The 1976 Space Treaty, 95, Journal de Droit International, 1968, 568, at p. 568.

36. Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space Including the Moon and Other Celestial Bodies, 1967, Article VIII.

37. Supra, footnote 35, at p. 574.

38. Ibid, at p. 574, 576.

regulate the geostationary satellite orbit. In view of some delegates, particularly those representing the equatorial states, there is a need to establish a sui generis legal regime, supplementing the existing space law to regulate the equitable access and rational utilization of the geostationary satellite orbit. However, most delegations consider that there is no need for such a regime and that the questions relating to the use of the geostationary orbit have been adequately resolved through the work of the ITU.[39]

(iii) The Freedom Principle

The Outer Space Treaty provides for freedom of exploration and use. Such freedom is not absolute, but must be exercised without discrimination of any kind, on a basis of equality and in accordance with international law.[40] It is also limited by the non-appropriation[41] and the common interest provisions[42]. Furthermore, outer space activities must be carried out in the interest of maintaining international peace and security and promoting international cooperation and understanding[43] as well as with due regard to the corresponding interests of all other states parties to the Treaty.[44] The use of the geostationary orbit is further subject to limitations contained in the ITU Radio Regulations.

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39. Jasentuliyana, N., The Legal Sub-Committee of COPUOS Achiever Progress in the Legal Dimension in Outer Space Activities, 18, Journal of Space Law, 1990, 35, at p. 37.

40. Supra, footnote 36, Art. I(2).

41. Ibid, Article II.

42. Ibid, Article I(1).

43. Ibid, Article III.

44. Ibid, Article IX.

B. International Telecommunication Law

1. Introduction

The principles and rules of international telecommunication law, which regulate access to and use of the geostationary orbit, are contained in the 1982 ITU Convention and its Radio Regulations.[44] The former incorporates the basic principles for spectrum/orbit management, and the latter contains detailed technical provisions for the efficient operation of radio services.

The practice of adopting a separate Convention and Radio Regulations resulted in the periodic convening of conferences attended by technical experts whose job is to up-date the Regulations. Instead of functioning as diplomats, whose major preoccupation is a balancing of political interests between sovereign states, their prime concern is to achieve co-operation in the constructive utilization of technology in order to best exploit the resource.[45]

The ITU, which used to deal only with the radio spectrum, in 1973 extended its functions to include the management of use of the geostationary orbit.[46] This action was justified on the basis of the close relationship between radio frequencies and the geostationary orbital positions of space stations. The orbit can be used only with radio frequencies, and the orbital positions of space stations need to be predetermined in order to avoid harmful interference.[47] The regulation of the geostationary orbit by ITU is not regulation of the orbit alone,

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44.A The Radio Regulations, ITU, 1982 as amended.

45. Supra, footnote 8, at p. 334.

46. Postyshev, V.M., WARC-ORB-85 and the Common Heritage of Mankind Concept in Space Law, xxix, Colloquium, 1986, 134, at p. 135.

47. Supra, footnote 12, at. p. 209.

but is subsidiary to its primary function, to maintain and extend international cooperation for the improvement and rational use of telecommunications of all kinds.[48]

The general policy of the ITU Convention with respect to access to and use of the orbit/spectrum resource is that it "must be used efficiently and economically so that countries or groups of countries may have equitable access to both."[49] Emphasis is placed on maximizing the availability of the resource to achieve the objective of equitable access.

Article 33(2) of the 1973 ITU Convention determined equitable access in terms of countries "needs and the technical facilities at their disposal." It could be interpreted to exclude countries without a present need and ability to use the orbit/spectrum resource from present considerations of equitable access.[50]

The provision in Article 33(2) regarding needs and technical facilities was unpopular with developing countries who were concerned about their future access to the orbit/spectrum resource. At the 1982 Plenipotentiary Conference, those countries succeeded in amending article 33 to provide instead that countries should have equitable access to the orbit/spectrum resource "taking into account the special needs of the developing countries and the geographical situation of particular countries."

While efficient and economical use of the orbit/spectrum resource is still a general objective, it can no longer be considered an end in itself: it is only a

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48. Ibid, at p. 210.

49. The ITU Convention, 1982, Art. 33(2).

50. Smith, M.L., Space WARC 1985: The Quest for Equitable Access, Boston University Int. L. J., 1985, 229, at p. 238.

means of ensuring all countries equitable access to this scarce resource.

The phrase "taking into account the special needs of the developing countries" does not grant a priority to developing countries for access to the orbit/spectrum resource. Rather, it acknowledges that the criteria for judging efficiency should not be the same for developed and developing countries. In determining equitable access, the needs of developing countries for particular uses of the orbit/spectrum resource, and for future uses, must be considered on the same basis as the uses made by developed countries notwithstanding the fact that less efficient and economical uses of the resource may result.[51]

The provision that equitable access should take into consideration "the geographical situation of particular countries" should be interpreted to mean that if a country is affected by a particular geographical situation that situation should be taken into account in determination of equitable access. For example, countries whose territories lie in extreme northern or southern areas are entitled to special treatment under article 33(2) as their territories may be covered only by limited segments of the geostationary arc and radio frequencies to/from their territories are subject to physical constraints resulting from their geographical location.[52]

The Radio Regulations do not give consideration to issues other than protection from harmful interference and the need for conformity with its rules.[53] Any attempt by an administration to block the procedure by refusing to give its

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51. Ibid., at p. 240-242.

52. Ibid, at p. 242-244.

53. Levy, S.A., Institutional Perspectives on the Allocation of Space Orbital Resources: The ITU, Common User Satellite System sand Beyond, 16, Case Western Reserve J. of Int. L., 1984, 171, at p. 187-188.

agreement, on grounds other than technical, cannot stop the administration which has initiated the procedure to complete it and get its assignment recorded.[54]

The island nation of Tonga has seized on a loophole in international law to lay claim to the last 16 desirable unoccupied orbital slots for satellites that can link Asia, the Pacific and the U.S.[55]

Tonga's venture into satellite communications began in 1987 when Mr. Nilson, who had been in the satellite business, persuaded the King of Tonga to sponsor an ambitious satellite system over the Pacific, where the market for telecommunications traffic is growing considerably.[56]

A proposed regional satellite system, TongaSat, has a plan to own a smaller part of the system. A majority of the stake would be shared by a group of investing countries and organizations. The participants in the system would receive a return on investment, like in Intelsat.[57] TongaSat intends to sell some of its satellite capacity.[58]

The filing of 31 applications with the IFRB by Tonga, a nation with a population of some 100,000 received negative international response. Speculation by the industry observers is that Tonga is fronting for another group, perhaps American, interested in establishing international separate satellite

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54. Sant, M., Regulatory Procedures, p. 29, SEM IFRB 3/90-E, at p. 34.

55. Telecom Highlights International, September 5, 1990, p. 11, at p. 11.

56. Ibid, at p. 12.

57. Telecom Highlights International, August 15, 1990, p. 15, at p. 16.

58. Satellite News, February 13, 1989, p. 2.

systems in the Pacific.[59]

Intelsat expressed grave concern over the action of the Tongan administration and tried to persuade the ITU and the IFRB to deny recognition to TongaSat's claims to orbital slots in a letter to the ITU Secretary General, Intelsat Director General, Mr. Burch, charged that the extremely large number of orbital slots involved is greatly in excess of Tonga's needs and that the country's real motivation is to conduct its own process of distributing orbital slots by selling or auctioning them to the highest bidder; that the TongaSat applications were filed for the purpose of precluding other ITU members from registering and using the orbital slots for legitimate purposes without financial remuneration to TongaSat.[60] Moreover, the Intelsat Director General regarded Tonga's plans as an abuse of international regulations that would set a dangerous precedent if not effectively challenged. Mr. Burch requested that the ITU change its regulations to prevent administration from speculating in space.[61]

The ITU is considering Mr. Burch's request to amend its rules to prevent such abuses, but no action could be taken until the next meeting of the WARC in 1992.[62]

In response to Tongan officials, the IFRB stated that it considers that the practice of initiating coordination procedures for a greater number of satellites than actually required is not in accordance with the provisions of the Radio Regulations. Moreover, its is counter-productive in that coordination would

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59. Satellite News, November 14, 1988, p. 10.

60. Telecommunications Reports, August 6, 1990, p. 40.

61. Satellite News, August 6, 1990, p. 7.

62. Satellite News, September 3, 1990, p. 2, at p. 3.

became more and more difficult if such a practice were to be accepted and would create considerable unproductive work for the administrations concerned and the Board.[63] Consequently, the IFRB requested Tonga to Specify 3-5 (or possibly 6) TongaSat networks that it plans to use and to cancel the requests for others.[64]

TongaSat denied that it was involved in registering more orbital positions than it needs for financial speculation in the geostationary orbit and for the purpose of gaining control over an excessive number of orbital slots which could they be speculated in or sold for financial gain.[65] It stated that its planned radiocommunication requirements could be met with a satellite system using 3-5 (or possibly 6) orbital positions and that Touga filed applications for more orbital positions than needed because it is uncertain how many can survive a difficult coordination process.[66] "In order to end up with six orbital positions one must start out with more than six."[67] It pointed out that the U.S. has 33 operational satellites but more than 200 orbital slot applications on file with the IFRB. Intelsat likewise has many more applications than plans to fly.[68]

There are two methods in the Radio Regulations through which protection from harmful interference can be obtained: 1) registration by the IFRB of an

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63. Satellite News, December 10, 1990, p. 4.

64. Ibid.

65. Satellite News, January 21, 1991, p. 5, at p. 6.

66. Supra, footnote 63, at p. 5.

67. Stephens, G.M., Regional Systems, Liberalization Top the Bill at PTC 91, Satellite Communications, March 1991, 29.

68. Supra, footnote 65, at p. 5.

assignment of an allocated frequency[69]; and 2) allotment in a plan.[70]

The "first-come, first-served" rule allows any administration to place a satellite in the geostationary orbit as long as it does not interfere with an existing satellite. Therefore, it protects users that are first in time, and requires newcomers to approach the existing stakeholders and seek such accommodation as they are willing to provide.[71]

While no country has ever been denied access to the geostationary orbit, at times difficulties have arisen during the inter-satellite coordination procedures.

The Indian Administration has experienced considerable difficulties in coordination of its domestic satellite system comprising of two space stations, namely, INSAT-1A and INSAT-1B. Even though this Administration had

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69. When Sputnik 1 was launched in 1957, standards were not developed for the allocation of portions of the radio frequency spectrum for space activities or services and there were no rules or guidelines to prevent possible interference between space systems. The US and the Soviet Union had themselves determined frequencies for their space activities without prior international recognition.

    The first regulation regarding the radio spectrum and the allocation of frequencies to space activities was at the 1959 Conference.

    The 1963 Conference established detailed procedures for the notification to the IFRB of frequencies used by communications satellites. It confirmed the terrestrial "first-come, first-served" a posteriori system and applied it to space services.

    At the 1971 WARC a new procedure for coordination of satellite system was adopted which provided procedures for the advance publication of information on planned satellite systems, for coordination to be applied in appropriate cases, and for the notification of frequency assignments.

    These procedures were further expanded by the 1979 WARC.

    In order to reduce inadequacies of the first-came, first-served rule, the 1988 WARC-ORB made several improvements.

70. ITU Radio Regulations; Appendix 30/Article 15; Appendix 30A/Article 15A; Appendix 30B.

71. Stern, M.L., Communication Satellites and the Geostationary Orbit: Reconciling Equitable Access with Efficient Use, 14, Law and Policy in International Business, 1982, p. 859., at p. 866.

identified two optimum positions for these satellites, their location had to be shifted to suboptimal positions due to incompatibility with other systems which were notified earlier. Further, several constraints had to be accepted (e.g. reduction in maximum channel capacities) causing this Administration difficulties in realizing the system objectives originally envisaged. Most of the adjustments to satisfy the interference criteria had to be accepted on the INSAT-1 network, as the later entrant.[72]

Similarly, Indonesia had to make a number of operational concessions in coordinating its satellite system.[73]

The experience of these two countries led them to seek from the 1979 WARC a decision to deal frontally with such conflicting claims as were emerging over the geostationary orbit.[74] They were strongly supported by the developing countries who believed that geostationary orbital location and radio frequencies would be totally occupied and unavailable in the future when the communication needs of developing countries had progressed to the point where they were prepared to launch their own communication satellites.[75]

The WARC-79 adopted the Resolution which resolved:

> "1) That a WARC shall be convened not later than 1984 to guarantee in practice for all countries equitable access to the geostationary satellite orbit

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72. ITU, WARC-ORB-85, Document 263-E, 11 September, 1985., at p. 79.

73. Doyle, S.E., Regulating the Geostationary Orbit: ITU's WARC-ORB-85-88, J. Space L., 1987, 1, at p. 7-8.

74. Doyle, S.E., Space Law and the Geostationary Orbit: The ITU's WARC-ORB-85-88 Concluded, J. Space L., 1989, 13, at p. 14.

75. Ducharme, E.D., The Genesis of the 1985/88 ITU WARC on the use of the Geostationary Satellite Orbit and the Planning of Space Services Utilizing it, vii, A.A.S.L., 1982, 261, at p. 262.

and the frequency bands allocated to space services;

2) That this conference shall be held in two sessions;

3) That the first session shall:

3.1) decide which space services and frequency bands should be planned;

3.2) establish the principles, technical parameters and criteria for the planning, including those for orbit and frequency bands identified as per 3.1, taking into account relevant technical aspects concerning the special geographical situation of particular countries; and provide guidelines for associated regulatory procedures;

3.3) establish guidelines for regulatory procedures in respect of services and frequency bands not covered by 3.2;

3.4) consider other possible approaches that could meet the objective of resolve 1;

4) That the Second Session shall be held not sooner than twelve months and not later than eighteen months after the First Session and implement the decisions taken at the First Session."

One of the fundamental problems that the WARC-ORB-85-88 had to face was how to reconcile the requirements of equity of access with efficiency and economy of use.[76] The positions of the developing and developed countries were very divergent. Developing countries wanted a rigid, long-term a priori plan whereby orbital locations will be reserved in advance, regardless of the lack of present need or even ability to launch a satellite by the nation holding that reservation. Developed countries wanted no part of such a plan; they considered the existing regulatory regime to be adequate, and they believed that technological advances would continue to allow access to the orbit/spectrum

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76. Fernandez-Brital, O., Legal Status of the Geostationary Orbit and ITU Recent Activities, 32, Colloquium, 1989, 223, at p. 226.

resource by all nations on acceptable conditions.[77]

Since no single method was able to address all of the criteria relevant to equitable access, two regulatory regimes emerged for the FSS. One is established in the Allotment plan and procedures for specific frequency bands of the FSS. The other, the "first-come, first-served" regime, modified in several respects, applies to the unplanned bands of the FSS.

The following plans for satellite services have been adopted so far:

1) Plans for the BSS in 11.7-12.5 GH_z (in Region 1), 12.2-12.7 GH_z (in Region 2); and 11.7-12.2 GH_z (in Region 3);[78]

2) Plans for the feeder links for the BSS of Appendix 30 in 14.5-14.8 GH_z and 17.3-18.1 GH_z (in Regions 1 and 3); and 17.3-17.8 GH_z (in Region 2);[79]

3) Plan for the FSS in the frequency bands 4,500-4,800 MH_z, 6,725-7,025 MH_z, 10.70-10.95 GH_z, 11.20-11.45 GH_z and 12.75-13.25 GH_z.[80]

Through the numerous amendments the Radio Regulations became extremely complex and very difficult to manage.[81] The complexity of the Radio Regulations adds not only an administrative burden to those who should apply them, but in some cases, it may endanger the realization of network projects. Some conferences in the past have tried to make the Radio Regulations more

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77. Smith, M., A New Era for the International Regulation of Satellite Communications, XIV, A.A.S.L., 1989, 449, at p. 450.

78. ITU Radio Regulations, Appendix 30/Article 15.

79. ITU Radio Regulations, Appendix 30A/Article 15A.

80. ITU Radio Regulations, Appendix 30B.

81. Brooks, G.C., Possible Future Evolution of the Radio Regulations (Space Services), p. 107, SEM IFRB 16/90-E, at p. 108-111.

usable (e.g. the WARC-79), but other conferences have added further complexities.[82] The 1989 plenipotentiary conference recognized the need for simplification of the Radio Regulations. It adopted resolution (Resolution No. PL-B13) requiring the Administrative Council to establish a voluntary group of experts which will, inter-alia, study the possibility of simplifying the regulatory procedures.[83]

2. Unplanned Services

(i) The 1982 Radio Regulations

The procedures for the registration of frequency assignments in the allocated bands of the unplanned space telecommunication services are set out in the Radio Regulations in articles 11 and 13 and their associated Appendices 3, 4, 28 and 29. These procedures involve three steps: 1) advance publication of the proposed system through the IFRB[84]; 2) coordination of potential problems concerning other countries[85]; and 3) notification of the satellite system[86]. Successful completion of these three steps results in registration.[87]

The advance publication requires that any administration planning a

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82. Kovacs, G., Introduction to the Radio Regulations, p. 23, IFRB Seminar on Frequency Management and the Use of the Radio Frequency Spectrum and the Geostationary - Satellite Orbit, Geneva, 8-12 October, 1990. SEM IFRB 2/90-E, at p. 27.

83. Supra, footnote 54, at p. 34.

84. The ITU Radio Regulations, 1982, Art. 11, Sect. I.

85. Ibid, Art. 11, Sects. II, III and IV.

86. Ibid, Art. 13, Sect. I.

87. Ibid., Art. 13, Sects. II and III.

satellite communication system send to the IFRB, not earlier than five years and not later than two years before the date of bringing into service each satellite network of the planned system, the information listed in Appendix 4. The IFRB publishes that information in a weekly circular that it sends to all administrations, who then have four months to comment on potential interference with their existing or planned space radiocommunication services. If no such comments are received within the period of four months it may be assumed that there is no basic objection to the planned satellite network.

An administration receiving comments shall first explore all possible means of resolving difficulties without considering the possibility of adjustment to systems of other administrations. If no such means can be found, the administration planning a satellite system is then free to apply to other administration concerned to solve these difficulties. The administrations receiving such request shall explore all possible means of meeting the requirements of the requesting administration, including the relocation of its satellite(s) or a change to the technical characteristics of its system(s). If difficulties still persist, all the administrations concerned shall together make every possible effort to resolve these problems by means of mutually acceptable adjustments. The Board provides assistance to the parties if so requested and keeps members of the ITU informed of the progress made in resolving difficulties of the type described above.

The purpose of the advance information procedure is to bring to light, in the very early stage of planning, any major system incompatibilities.[88]

The success of the above procedure to resolve foreseen problems depends

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88. Supra, footnote 75, at p. 270.

to a large extent on the goodwill and cooperation of all parties and the onus for remedial action rests on all parties but without specific obligations being placed on anyone's part.[89]

Before an administration notifies to the Board or brings into use any frequency assignment to a space station on a geostationary satellite or to an earth station that is to communicate with space station on a geostationary satellite, it shall effect coordination of the assignment with any other administration whose assignment might be affected.[90]

No coordination is required: a) when the use of a new frequency assignment will cause, to any service of another administration, an increase in the noise temperature of any space station receiver or earth station receiver, or an increase in the equivalent satellite link noise temperature, which does not exceed the threshold value defined in Appendix 29; b) when the interference resulting from a modification to a frequency assignment which has previously been coordinated will not exceed that value agreed during coordination; c) when an administration proposes to notify or bring into use a new earth station within a service area of an existing satellite network; d) when, for a new frequency assignment to a receiving station, the notifying administration states that it accepts the interference resulting from the frequency assignments for which

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89. Ibid.

90. The ITU Radio Regulations, 1982, Art. 11, Par. 1060.
Coordination may also be required to ensure that the earth stations associated with the space system being planned will not interfere with, or not be interfered by, terrestrial systems located in the general area: Art. 11, Sect. III - coordination of frequency assignments to an earth station in relation to terrestrial station; Art. 11, Sect. IV - coordination of frequency assignments to a terrestrial station for transmission in relation to an Earth station.

coordination is required; e) between earth stations using frequency assignments in the same direction (either Earth-to-space or space-to-Earth).[91]

The coordination process acts as the final screening to ensure system compatibility. It is based on very detailed technical information of the planned system. The information contained in Appendix 3 is exchanged with the help of the IFRB, and the administration are required to work out their differences. There is no legal obligation for an administration whose previously registered station may be interfered with, to change any characteristics of its system. While IFRB assistance may be requested, coordination is mainly a matter of bilateral negotiation. The resolution of the conflict rests entirely on the good will of the administration involved. Although the coordination process has never failed to accommodate a system, the results have not always been completely satisfactory to the administrations seeking coordination.[92]

Notification, which follows coordination, is required: "a) if the use of the frequency concerned is capable of causing harmful interference to any service of another administration; or b) if the frequency is to be used for international radiocommunications; or c) if it is desired to obtain international recognition of the use of the frequency."[93]

Such notice, drawn up as prescribed in Appendix 3, shall be submitted to the Board not earlier than three years before the date the assignment is to

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91. Ibid., Art. 11, Par. 1066-1071.

92. Smith, M.L., International Regulation of Satellite Communication, Kluwer Academic Publishers, 1990, at p. 48.

93. Radio Regulations, 1982, Art. 13, par. 1488-1491.

be brought into use and not later than three months before that date.[94] The notice is published by the Board in its weekly circular within a period of forty days after its receipt.[95] The Board shall examine each notice: with respect to its conformity with the Convention, the Table of Frequency Allocations and the other provisions of the Radio Regulations; with respect to its conformity with the coordination procedures; and with respect to the probability of harmful interference, when the coordination has not been successfully effected.[96]

When the Board finds an assignment notice favourable as to its conformity with the ITU Convention and the Radio Regulations, and when the coordination procedures have been successfully completed with all administrations whose radiocommunications stations may be affected, the assignment shall be recorded in the Master Register.[97]

If the Board finds the notice unfavourable with respect to its conformity with the Convention and the Radio Regulations, but favourable with respect to its conformity with the coordination provisions, it shall record the assignment in the Master Register if the notifying administration agrees to use the notified orbital position/frequency on a basis of non-interference.[98]

Even when the Board's finding is unfavourable with respect to its conformity with the Convention and the Radio Regulations, and when the coordination procedure has not been complied with, the assignment shall be

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94. Ibid., Art. 13, par. 1496.

95. Ibid., Art. 13, par. 1499.

96. Ibid., Art. 13, par. 1502-1512.

97. Ibid., Art. 13, par. 1526.

98. Ibid., Art. 13, par. 1520-1521.

recorded in the Master Register if the notifying administration agrees to use the notified orbit position/frequency on a basis of non-interference and to eliminate interference, if caused to stations that operate in accordance with the Convention and the Radio Regulations.[99]

Where the Board finds the notice favourable with respect to the ITU Convention and the Radio Regulations and where the coordination procedure has not been applied, if the notifying administration requests the Board to effect it, and if the Board's efforts are not successful, it shall examine the notice with respect to the probability of harmful interference.[100] If the Board's finding is unfavourable with respect to the probability of harmful interference, it shall return the notice to the notifying administration. Should the notifying administration resubmit the notice with modifications which result in a favourable finding by the Board with respect to the probability of harmful interference, the assignment shall be recorded in the Master Register. The date of receipt by the Board of the original notice shall be entered in Column 2d. However, if the notifying administration resubmits the unchanged notice, the assignment shall be recorded only if the Board is informed that the new assignment has been in use for at least four months without any complaint of harmful interference.[101]

An administration which has recorded an assignment of a geostationary orbital position and its associated radio frequencies in the Master Register has the right to use that assignment. This right is not limited in time. While a new

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99. Ibid., Art. 13, par. 1522.

100. Ibid., Art. 13, par. 1527-1529.

101. Ibid., Art. 13, par. 1541-1544.

notice must be filed with the Board if there is a change in the basic characteristics of an assignment already recorded, this is not the case of changes of the name of the station or the date of bringing it into use.[102] Therefore, an administration has a right to replace a satellite with one having the same basic technical characteristics, thereby retaining the international protection accorded to the original recording.

Although a right to perpetual use may exist in law, it has not existed in fact. As technology has advanced so rapidly, the practice has been to replace one series or generation of satellites with a more advanced series possessing different characteristics, which requires coordination and notification.[103]

The essence of the right acquired through first use and notification is a preferred position in the technical coordination procedures. The value of this preferred position is that if a satellite system operating in accordance with the ITU Convention, Table of Frequency Allocation and other provisions of the Radio Regulations, receives harmful interference from an uncoordinated, subsequently deployed satellite system, the latter satellite system must, upon receipt of advice thereof, immediately eliminate this harmful interference. Hence, significant power is placed in the hands of the first comer to an orbital position and frequency. While this firstcomer is obliged to participate in a coordination process, it can never be forced to substantially modify its system to make more room for a new system. The latecomers can always be forced to make all system compromises necessary to avoid causing harmful interference to the firstcomer.

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102. Ibid., Art. 13, par. 1548.

103. Supra, footnote 92, at p. 50-51.

As the orbit/spectrum resource becomes crowded at a particular frequency band, latecomers to the geostationary orbit face coordination which is increasingly difficult, lengthy and costly in terms of compromised system performance.[104]

A latecomer may have to settle for an inferior orbital location, and one using higher frequencies too, and thereby incur higher resultant capital and operating expenses. Latecomer cost handicap is largely due to the inferior propagation characteristics of higher, newer frequency bands. It is due also to the relatively greater scale economies that equipment manufacturers now enjoy in the older, more fully utilized C-band, than in the higher Ku frequencies where equipment demand and supply are smaller. However, those higher cost may be mitigated by the lower costs of satellite coordination, congestion and signal interference effects in those same higher frequencies.[105]

In order to achieve efficiency in use of the orbit/spectrum resource, the Board is required, at intervals not exceeding two years, to request confirmation from the notifying administration that its assignment has been and will continue to be in regular use in accordance with its recorded characteristics.[106]

Where the use of a recorded assignment to a space station is suspended for a period of eighteen months, the notifying administration shall, within that period, inform the Board of the date on which such use was suspended and of

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104. Rothblatt, M.A., The Impact of International Satellite Communications Law upon Access to the Geostationary Orbit and the Electromagnetic Spectrum, Texas Int. L. J., 1981, 207, at p. 237.

105. Levin, H.J., Global Claim-Staking and Latecomer Cost in the Orbit Spectrum Resource, Telecommunications Policy, June 1990, 233, at p. 233-234.

106. Radio Regulations, 1982, Art. 13, par. 1569.

the date on which the assignment is to be brought back into regular use.[107]

Whenever it appears to the Board that a recorded assignment to a space station has not been in regular use for more than eighteen months, the Board shall inquire of the notifying administration as to when the assignment is to be brought back into regular use.[108] If no reply is received within six months of the date of the Board's inquiry, or if the reply does not confirm that the assignment is to be brought back into regular use within this six-month limit, a mark shall be applied against the entry in the Master Register. Thereafter, the assignment shall not be entitled to protection against harmful interference from subsequently recorded assignments.[109]

In case of permanent discontinuance of the use of the recorded assignment, the notifying administration is required to inform the Board within three months of such discontinuance, whereupon the entry shall be removed from the Master Register.[110]

When it appears to the Board from the information available that a recorded assignment has not been brought into regular operation in accordance with the notified basic characteristics, or is not being used in accordance with those basic characteristics, the Board shall consult the notifying administration and cancel and modify the entry, only if so agreed with that administration.[111]

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107. Ibid., Art. 13, par. 1570.

108. Ibid., Art. 13, par. 1571.

109. Ibid., Art. 13, par. 1572.

110. Ibid., Art. 13, par. 1573.

111. Ibid., Art. 13, par. 1574.

(ii) The WARC-ORB-88

The 1988 Conference made several changes to Articles 11 and 13 of the Radio Regulations, as well as to Appendices 3 and 4. However, it preserved the basic attributes of the former regulatory regime for the FSS in the unplanned bands. The legal nature of rights obtained through registration of an assignment remains the same. The registered assignment is protected from harmful interference for an indefinite period of time. The administration is under no specific obligation to move a satellite or to alter operating characteristics in order to accommodate a new satellite network. No burden-sharing criteria were adopted to force the joint resolution of difficulties incurred during coordination.[112]

Under the 1982 Radio Regulations the period allowed to bring a satellite network into service was six and one half years from the commencement of advance publication. If this time limit was not met, the process had to be initiated again. The 1988 Conference recognized that this time limit was no longer realistic, as satellite networks had become more complex, thereby increasing the time required for coordination. Moreover, launch vehicle failures and the resulting shortage of launch vehicles had greatly compounded the difficulties of securing a timely launch.[113] In light of these concerns, the period following advance publication during which a satellite network is to be brought into service was increased from five to six years.[114] In addition, the notified date of bringing into use of a satellite network could be extended, at the request of

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112. Supra, footnote 92, at. p. 172.

113. Ibid., at p. 140.

114. WARC-ORB-88, Final Act.

the notifying administration, by three years[115], instead of eighteen months.

If an administration responsible for the planned network encounters difficulties in the advance publication stage, it may request other administrations, either bilaterally or multilaterally, or in exceptional circumstances through the convening of multilateral meetings, to mutually help resolve these difficulties.[116] If unresolved difficulties remain, the administrations concerned must make every possible effort to resolve them by means of mutually acceptable adjustments.[117] In case the Board's assistance is sought, the 1988 Conference specifically delineated its duties.[118]

Similar changes were made in the coordination stage. The administration seeking coordination as well as the affected administrations are to make all possible mutual efforts to overcome the difficulties, in a manner acceptable to the parties concerned. This can be done either through bilateral or multilateral meetings, which can be held at any stage of the process of obtaining access to the geostationary satellite orbit and the radio-frequency spectrum.[119] Moreover, the 1988 Conference added the Multilateral Planning Meeting (MPM) concept to the Radio Regulations. The MPM are a part of the process of coordination for the fixed-satellite service in the following bands: 3700-4200 MH_z, 5850-

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115. Ibid., Art. 13, MOD 1550.

116. Ibid., Art. 11, MOD 1051.

117. Ibid., Art. 11, MOD 1053.

118. Ibid., Art. 11, ADD 1054 A, B and C:
"a) evaluating the levels of interference; b) defining, with the agreement of the administrations concerned, the method and criteria to be used; c) making arrangements to facilitate discussions as mutually agreed by the administrations concerned."

119. Ibid., Art. 11, ADD 1085 A and B.

6425 MH_z, 10.95-11.20 GH_z, 11.45-11.70 GH_z, 11.70-12.20 GH_z in Region 2, 12.50-12.75 GH_z in Regions 1 and 3, and 14.00-14.50 GH_z.[120]

The multilateral coordination among the administrations concerned may take the form of an MPM in exceptional cases.[121] The Radio Regulations do not define the term "exceptional cases". However, Resolution COM 6/3, which was incorporated by reference to the Radio Regulations, states that the convening of MPMs would be appropriate when an administration finds it has a major difficulty in obtaining coordination under the pertinent provision of Article 11. Therefore, "exceptional cases" could include any situation where bilateral coordination has been attempted and, after a reasonable time period, major difficulties remain.[122]

MPMs are not a guaranteed method to resolve coordination disputes. While an administration seeking the coordination of a satellite network, in the FSS bands mentioned above, may propose the holding of an MPM[123], the administrations concerned are not required to attend.[124] The results of the MPM have the status of coordination agreements among the participants and they in

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120. Ibid., Resolution COM 6/3, Resolves 1.

121. Ibid., Art. 11, ADD 1085 C.
While WARC-ORB-85 envisioned MPMs as the normal method of coordination, during the inter-sessional period, most administrations concluded that MPMs presented a risk of unnecessarily increasing both the costs of coordination and the time required to effect coordination. Consequently, MPM were established for use only in exceptional cases. Smith, M., A New Era for the International Regulation of Satellite Communications, XIV, A.A.S.L., 1989, 449, at p. 455.

122. Supra, footnote 92, at p. 160.

123. Supra, footnote 114, Resolution COM 6/3, Resolves 3.

124. Ibid., Resolves 5.

no way prejudice the rights of non-participating administrations.[125]

The Radio Regulations were further simplified by introducing the concept of network coordination and notification.[126] The new changes allow for coordination under article 11 to be effected for a satellite network using the information relating to the space station, including its service area, and the parameters of one or more typical earth stations which may be located in all or part of the space station service area.[127] Individual earth stations within the service area of a satellite network do not require coordination if they have the parameters of the associated typical earth station or if they would not cause or suffer interference of a level greater than the typical earth station.[128]

The new provisions of article 13 permit notification of a frequency assignment to a space station along with one or more associated typical earth stations with the area in which they are intended to operate.[129] Individual coordination of an earth station is required only when the coordination area overlaps the territory of another administration in which the frequency band is allocated with equal rights to the terrestrial services; and when the characteristics of the earth station are such that the interference caused or suffered is greater

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125. Ibid., Resolves 6.

126. Under articles 11 and 13 of the 1982 Radio Regulations, Earth stations that were not associated with the original coordination action had to be separately coordinated and notified. This entailed additional expense and administrative burdens both for administrations and for the IFRB.

127. Supra, footnote 114, Art. 11, ADD 1060 A.

128. Ibid., Art. 11, ADD 1066 A.

129. Ibid., Art. 13, ADD 1493 A.

than for any typical earth station already coordinated for the relevant location.[130]

To complete the changeover to the network coordination and notification concept, certain provisions of Articles 11 and 13 as well as Appendices 3 and 4 were realigned.

(iii) Resolution No. 33

The first-come, first-served rule applies to access to and use of the orbit/spectrum resource for the BSS in all the allocated frequency bands, except in the ones covered by the 1977 and 1983 plans. Resolution No. 33 prescribes the procedure to be followed in this case.

3. Planned Services

(i) The 1977 Plan

The regulations relating to the BSS were developed prior to the placing in service any broadcasting-satellite system. In almost every other regulatory development undertaken by the ITU numerous operational systems were already in service and their characteristics had to be taken into account when related regulations were developed or revised.[131]

The 1971 WARC decided that stations in the broadcasting-satellite service should be established and operated in accordance with agreements and

130. Ibid., Art. 13, ADD 1494 A, B and C.

131. DuCharme, E.D., et al, Direct Broadcasting by Satellite - The Development of the International Technical and Administrative Regulatory Regime, IX, A.A.S.L., 1984, 267, at p. 267.

associated plans adopted by radio administrative conferences of the ITU.[132] This was the first attempt to prepare ab a priori plan for a space service.

The highly political overtones and the social and cultural impact of DBS, together with the question of spillover (broadcasting radiation that cannot technically be prevented from covering a territory adjacent to the intended coverage area) onto the territory of other countries, were factors which prompted the planning of DBS. It was expected that the a priori planning and assignment of radio channels, orbit positions and associated coverage areas to individual countries would significantly alleviate the spillover problems. Moreover, a priori planning would ensure that orbit/spectrum resources would be available equitably to meet the needs of all countries.[133]

Recognizing the apprehension expressed by some countries regarding spillover from foreign broadcasts, the 1971 Conference adopted the following regulation:

> 428 A. (4) "in devising the characteristics of a space station in the BSS, all technical means available shall be used to reduce, to the maximum extent practicable, the radiation over the territory of other countries unless an agreement has been previously reached with such countries."

This was followed up by the 1973 ITU Plenipotentiary Conference which resolved in Resolution 27 that a WARC for the planning of the BSS in the 12 GH_z frequency band should be convened in 1977.[134]

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132. Jipguep, J., The ITU and the Regulation of Satellite Broadcasting, in, Stephen de Bate, B., (ed.), Television by Satellite: Legal Aspects, Oxford (Oxon): ESC Pub., 1987, at p. 7.

133. Supra, footnote 131, at p. 269-270.

134. Mili, M., WARC for the planning of the BSS, XX, Colloquium, 1977, 346, at p. 348.

The WARC 1977 successfully established a frequency/orbit plan for Regions 1 and 3, but deferred the development of a Region 2 plan until 1982 (later deferred to 1983).[135] The plan entered into force on 1 January 1979 and was incorporated into the Radio Regulations as Appendix 30 by the 1979 WARC. It was designed to meet the requirements of the administrations concerned for a period of fifteen years.

The 1977 plan allotted specific orbital positions, broadcasting channels and service areas on a country-by-country basis. Countries were allotted from 2 channels to 65 channels, depending on their size, population and foreseeable communication needs. The plan is extremely detailed and covers virtually all satellite characteristics that may affect transmission. The BSS in the 12 GH_z band was to be used only for domestic broadcasting. Spillover was reduced to a minimum consistent with No. 428 A of the Radio Regulation.[136]

Countries in Regions 1 and 3 are required to operate only in accordance with the plan. No variations were permitted even on a non-interference basis. A procedure for plan modification was established which requires approval of all administrations potentially affected by the proposal.[137] However, once a modification to a frequency assignment has been agreed, the frequency assignment concerned shall enjoy the same status as those appearing in the Plan and will be considered as a frequency assignment in conformity with the Plan.[138]

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135. Supra, footnote 75, at p. 268.

136. White, R.L. and White Jr., H.M., The Law and Regulation of International Space Communication, Artech House, 1988, at p. 156-165.

137. Radio Regulations, Appendix 30, Art. 4.

138. Ibid., Appendix 30, 4.3.17.

If an agreement to modification to the Plan has been effected for a specified period of time, the administration using the frequency assignment shall not subsequently invoke this fact to justify the continued use of the frequency beyond the period specified unless it obtains the agreement of the administration(s) concerned.[139]

The main criticism of the 1977 Plan is that it is rigid, lacking the flexibility to adjust quickly and easily to changes in requirements and in technology. Significant and technologically unnecessary limitations exist on the number of TV channels that are available from satellite transmission and on the ways that those channels can be used. The 1977 Plan was based on technical standards of the time, which have since been obsolete. For example, since its adoption technological advances have allowed closer spacing between satellites. However, the Plan has blocked in satellite separation at six degrees. Moreover, it would be extremely difficult to develop a new regional or sub-regional beam from a single orbital position in Europe or the Middle East or in Africa. If several countries now decide they wish to cooperate to build a single satellite platform and to share programming from it, the 1977 Plan would effectively preclude that joint effort without some fundamental and complex changes.[140]

Several regional system proposals have been blocked and frustrated by the 1977 Plan to the aggravation of many administrations, including those which supported the Plan. They made the Plan before they knew what they wanted

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139. Ibid., 5.2.6.

140. Stowe, R.F., The Legal and Political Considerations of the 1985 WARC, 11, J. Space L., 1983, 61, at p. 63.

and the Plan significantly constrained their choices.[141] During the period between WARC-BSS-77 and the 1983 RARC, no BSS was implemented in any region.[142]

Under the Plan the administration have acquired the right to use the geostationary orbital positions and radio frequencies. This does not imply national property rights. This right to use the orbit/spectrum resource is not perpetual. Since, under the Plan, rights against harmful interference are obtained when the Plan became effective, the requirement of registration is merely formality and the registration procedure is rather simple.[143]

When an administration intends to bring into use a frequency assignment to a space station in the BSS, it shall so notify the Board not earlier than three years nor later than three months before the assignment is to be brought into use.[144] The Board shall examine each notice with respect to its conformity with the Convention, the Radio Regulations and the Plan. If its finding is favourable the frequency assignment shall be recorded in the Master Register. All frequency assignments brought into use in conformity with the Plan and recorded in the Master Register shall be considered to have the same status irrespective of the dates they are recorded.[145]

If a frequency assignment notified in advance of bringing it into use has received a favourable finding by the Board with respect to its conformity with the provisions of the ITU Convention, the Radio Regulations and the Plan, it

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141. Supra, footnote 66, at p. 161.

142. Supra, footnote 131, at p. 275.

143. Supra, footnote 92, at p. 47.

144. Radio Regulations, Appendix 30, 5.1.1; 5.1.3.

145. Ibid., 5.2.2.

shall be entered in the Master Register with a symbol in the Remarks Column indicating the provisional nature of that entry.[146] When the Board has received confirmation that the assignment has been brought into use, it shall remove the symbol in the Master Register.[147] However, if the Board has not received such confirmation, it will either modify the date of coming into use or cancel the entry.[148]

The notifying administration is required to inform the Board within three months, if the use of any recorded frequency assignment is permanently discontinued, whereupon the entry shall be received from the Master Register.[149]

The 1977 Plan provides for the coordination, notification and the registration procedure to be followed by the Administration in Regions 1 and 3, in the case they want to use radio frequency in the 12 GH_z band for their terrestrial and space services other than the BSS.[150]

The 1977 Plan covers only downlinks and not uplinks or so-called feeder links. As feeder links are included within the FSS, any fixed-satellite allocation could be used. It was not necessary to designate feeder link frequencies. Nevertheless, many countries, especially those in the Third World, were apprehensive that unless specific bands were designated and planned for this purpose there would not be adequate frequencies to accommodate the BSS

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146. Ibid., 5.2.7.

147. Ibid., 5.2.8.

148. Ibid., 5.3.1.

149. Ibid., 5.3.2.

150. Ibid., Arts 6 and 7.

planned in 1977.[151] Consequently, the BSS feeder link plan for Regions 1 and 3, in the frequency bands 14.5-14.8 GH_z and 17.3-18.1 GH_z, was adopted by WARC-ORB-88 for incorporation into Appendix 30A of the Radio Regulations.

(ii) The 1983 Plan

The 1977 Conference postponed the immediate adoption of a plan for Region 2. Instead, it adopted an interim arc segmentation plan to be used in this region until a definite plan was adopted. In Region 2, BSS and FSS shared the 12 GH_z band. There was concern among some countries of this Region that extensive implementation of the FSS might foreclose opportunities for BSS. The purpose of the interim arc segmentation plan, which gave separate orbit segments to each service, was to ensure that 12 GH_z band would be available to both BSS and FSS. However, it turned out that this segmentation plan put severe and unnecessary constraints on the number of satellites, in both services, that could use the arc.[152]

The 1979 WARC replaced the arc segmentation plan with a frequency segmentation approach. The effect of the change was to double the total bandwidth available to space services and to divide 11.7-12.3 GH_z band between FSS (11.7-12.7 GH_z) and BSS (12.3-12.7 GH_z). The band 12.1-12.3 GH_z remained allocated to both services until separated by the 1983 RARC. Under the new regulations, the entire geostationary orbital arc over Region 2 was open

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151. Robinson, G.O., Regulating International Airways: The 1979 WARC, 21(1), Virginia Journal of International Law, 1980, 1, at p. 23.

152. Ibid., at p. 25.

to satellites of either type.[153]

The 1983 RARC established the lower end of the BSS band at 12.2 GH_z, thereby eliminating the provision for sharing between the two services that was established at WARC-79.[154] It adopted the plan for both uplinks and downlinks, allotted 48 orbital positions and 2,114 television channels among the individual countries.

Unlike the 1977 Plan, the 1983 Plan is characterized by flexibility in addition to the procedure for plan modification, which is similar to that used in the 1977 Plan, the following areas of flexibility were built into the 1983 Plan. First, a system that varies from the characteristics specified in the Plan, but which would not adversely affect other administrations, may be established Second, a system that differs from the Plan may be established on an interim basis, even though it may adversely affect the assignments of other administration. Although agreement of affected administrations is required if increased interference could result, the procedure is simpler than that required for permanent plan modification. Finally, same flexibility in orbital location was allowed. An administration that shares an orbital location may place its satellite anywhere within a 0.4 degree arc centered on the nominal orbital location.[155] However, a proposal to permit use of an orbital position different from that in

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153. Rothblatt, M.A., ITU Regulation of Satellite Communication, XVIII, Stanford Journal of International Law, 1982, 1, at p. 13; Gorove, S., The WARC 1979: Some Legal Political Implications, Zeitschriftfür Luftrecht und Weltraumrechtsfragen, 1980, 214, at p. 219.

154. Supra, footnote 136, at p. 194.

155. Supra, footnote 92, at p. 67.

the plan was not adopted.[156]

The 1983 Conference decided to adopt ten years as the minimum period of validity of the Region 2 Plan primarily to align its duration with that of the Plan for Regions 1 and 3 which is valid at least until 1994.[157] The 1983 Plan was approved and incorporated into the Radio Regulations at WARC-ORB-85.

A less rigid plan in Region 2 was possible because more was understood about the need for flexibility in 1983 than in 1977.[158] It was also possible because of marked advances in DBS technology which happened in those six years.[159]

(iii) The 1988 Plan

The WARC 1988 established an arc allotment plan, the purpose of which is to guarantee in practice, for all countries, equitable access to the geostationary orbit in the following frequency bands: 4,500-4,800 MH_z (space-to-Earth); 6,725-7,025 MH_z (Earth-to-space); 10.70-10.95 GH_z (space-to-Earth); 11.20-11.45 GH_z (space-to-Earth); 12.75-13.25 GH_z (Earth-to-space).[160] These bands have not been used to date. Hence the costs of implementing services in these bands may

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156. Supra, footnote 131, at p. 280.

157. Ibid.

158. Supra, footnote 136, at p. 194.

159. Savage, J.G., The Politics of International Telecommunications Regulation, Boulder: Westview Press, 1989, at p. 112; Wheelon, A. and Miller B., Trends in Satellite Communications, in Pelton, J.N., Satellites International, John Howkins, The MacMillan Press, 1987, 61, at p. 8.

160. ITU, Final Acts Adopted by the Second Session of the WARC on the Geostationary-Satellite Orbit and the Planning of Space Services Utilizing it, 1988, Appendix 30B, Art. R.

prove to be expensive for most administrations concerned.[161] Only one percent of the total spectrum allocated to the space services is covered by the Plan.[162]

The Plan is divided in two parts: A) the national allotments, and B) networks of existing systems.

Procedures for implementation of the Plan and regulation of the FSS in the planned bands is provided in Art. L of Appendix 30B of the 1988 Final Acts. These procedures are not to prevent the implementation of assignments which are in conformity with part A of the Plan.[163] In other words, should other uses of the Plan bands, such as by existing systems, subregional systems or additional uses, conflict with the implementation of an allotment, that other use should bear a responsibility to help accommodate the allotment.

When an administration intends to convert an allotment[164] into an assignment, it shall, not earlier than five years and not later than one year before the planned date of bringing the network into use, send to the IFRB the information specified in Annex 2.[165] Upon receipt of a complete notice of a frequency assignment related to that allotment, the Board shall examine it with

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161. Ospina, S., The ITU and WARC-ORB: Will the Revised Radio Regulations Result in a Sui-Generis Legal Regime for the GSO, 32, Colloquium, 1989, 247, at p. 249.

162. Developments in the International Law of Telecommunications, 17, J. Space L., 1989, 47, at p. 49.

163. Supra, footnote 160, Appendix 30B, Art. R.

164. For the purpose of this plan an allotment comprises: a nominal orbital position; a bandwidth of 800 MH_2 in the frequency bauds covered by the plan; a service area for national coverage; generalized parameters; and a predetermined arc (Appendix 30B, Art. F).

165. Appendix 30B, Art. L, Para. 101.

respect to its conformity with part A[166], the macrosegmentation concept of Annex 3B[167] and with respect to its conformity with Part B of the Plan.[168] If the Board's finding is favourable it shall record the assignment in the list.[169]

If the Board finds that the proposed assignment is in conformity with Part A of the Plan but that the provisions of the Macrosegmentation concept of Annex 3B are not met, the Board shall then identify affected administrations having assignments in the list.[170] If no administrations are affected, the Board shall record the assignment in the list.[171] If administrations are affected, the administration responsible for the proposed assignment shall seek the agreement of the affected administrations.[172] In case no agreement is reached, the notice shall be returned.[173] When agreement in reached, the administration responsible for the proposed assignment shall advise the Board, which shall modify the orbital position and PDA in the Plan, if necessary, and shall record the

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166. Ibid., Para. 102.
"A notice of an assignment is considered to be in conformity with part A of the plan if: a) the service area is not greater than the service area in Part A of the plan; b) it meets the criteria of Annex 3A; and c) the orbital position corresponds to the nominal orbital position in the plan." (para. 103).

167. Ibid., Para. 105.

168. Ibid., Para. 105 bis.

169. Ibid.

170. Ibid., para. 107 bis; 205.

171. Ibid., para. 206.

172. Ibid., para. 207.

173. Ibid., para. 210.

assignment in the list with a special symbol.[174] The special symbol represents an undertaking by the administration responsible for the proposed assignment that it will accommodate, if necessary, future assignments that are in conformity with parts A and B of the Plan and with Annex 3B.[175]

When the proposed assignment is in conformity with Part A of the Plan and with the macrosegmentation concept of Annex 3B, but incompatible with Part B of the Plan, a procedure outlined in Art. L, para. 108 is to be applied. This procedure emphasizes the responsibility of an administration with an existing system to accommodate the administration seeking to implement its allotment.[176] However, both administrations are to cooperate in reaching an equitable agreement, taking into account the respective stages of development of their systems and recognizing that a means must be found to convert the allotment into an assignment which is acceptable to both parties.[177] After resolution of any incompatibilities the Board shall then record the assignment in the list.[178]

If the proposed assignment is not in conformity with Annex 3A, the administration seeking to convert its allotment may modify the characteristics of its proposed assignment or select an alternative orbital location, preferably within its PDA.[179] The administration seeking to convert its allotment to an

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174. Ibid., para. 208.

175. Ibid., para. 209.

176. Ibid., para. 108 (a).

177. Ibid., para. 108 (c).

178. Ibid., para. 109.

179. Ibid., para. 202.

assignment should first attempt to meet its requirements from the nominal orbital location listed in the Plan. However, if it cannot do so, it is not limited to a location within its PDA. The administration could seek a position anywhere within its service arc, which may be far from its PDA. If incompatibilities still remain, the PDA concept shall be used.[180] If successfully applied, the examination of the proposal's conformity with Annex 3B (macrosegmentation concept) and Part B of the Plan shall follow.

The procedures for recording in the list the existing systems[181] contained in Part B of the Plan is provided for in Sect. 1B of Art. L. They are similar to the procedures applicable to the conversion of an allotment into assignment. However, in case of incompatibilities among existing systems listed in Part B of the Plan the coordination provisions of Art. 11 of the Radio Regulations shall apply.[182] The procedures contained in Sect. 1B of Art. L will be used for nine years from the date of entry into force of the Plan. Existing systems that are not brought into use within that period will be cancelled by the Board.

At the 1988 Conference, many developing countries sought to have allotments for subregional networks included in the plan along with national

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180. Ibid., para. 204.

181. Ibid., Art. F: "The existing systems are those satellite systems, in the frequency bands covered by the 1988 Plan: a) which are recorded in the Master International Frequency Register; or b) for which the coordination procedure has been initiated; or c) for which the information relating to advance publication was received by the Board before 8 August, 1985, and which in all cases are listed in Part B of the Plan."

Satellite networks intended for use in the frequency bands of the 1988 Plan for which information was communicated to the IFRB between 8 August 1985 and 5 October 1988 are permitted to develop under conditions specified in Resolution COM 4/1 of the 1988 Final Acts.

182. Ibid., para. 301 (B).

allotments. As developing countries are more lively to initiate satellite service through a subregional network rather than through national systems, they argued that they had no guarantee of access unless these subregional networks were included in the Plan.[183] The Second Session of the WARC-ORB decided that subregional systems[184] should not be included directly in the Plan, but should be accommodated through the procedures associated with the Plan.[185]

Under the procedure for the introduction of a subregional system, a group of administrations intending to bring into use such a system selects one or more orbital positions, preferably from the national allotments involved.[186] The national allotments used by the subregional system are suspended for the period of its operation unless they can be used in a way that does not affect allotments in the Plan or assignments made in accordance with the procedure associated with the Plan.[187] In the event of cessation of the subregional system, suspended national allotments shall continue to enjoy the same protection as that afforded to other allotments in the Plan which are not suspended.[188]

When the Board receives a notice relating to the proposed assignment,

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183. Taylor, L., Depoliticizing Space WARC, Satellite Communications, January 1989, 28, at p. 31.

184. For the purpose of application of the Appendix 30B, a subregional system is a satellite system created by agreement among neighbouring country, members of their, or their authorized telecommunications operating agencies, and intended to provide domestic or subregional services within the geographical areas of the countries concerned.

185. Appendix 30B, Art. L, Sect. II

186. Ibid., para. 201.

187. Ibid., para 202.

188. Ibid., para. 203.

it determines whether this assignment affects: the allotments in the Plan, the assignments which appear in the list, and the assignments which are in the process of being implemented.[189] If the Board's finding is favourable, it enters the proposed assignment in the list.[190] In the event of an unfavourable finding, the procedures that follow is specified in paras. 208-212.

During the 1988 Conference the administrations expressed different views on the question of additional uses. Developed countries wanted such uses for systems that might not be in conformity with the Plan and for requirements they might have in addition to their allotment. Developing countries suspected that additional uses would restrict their flexibility in implementing allotments.[191] Article L, Section III of the Appendix 30B reflects a compromise. While it urges administrations to use bands which are not covered by the plan, it permits additional uses[192] with significant restrictions. The procedure for an additional use may be applied provided that the proposed assignments have a maximum

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189. Ibid., para. 206.

190. Ibid., para. 207.

191. Supra, footnote 92, at p. 128.

192. Appendix 30B, Art. G: "Additional use: for the application of the provisions of Appendix 30B, additional uses shall be those of an administration: a) which has a requirement whose characteristics differ from those used in the preparation of Part A of the Plan; any such requirement shall be limited to national coverage, taking into account technical constraints of the administrations concerned, unless otherwise agreed. Additionally, such requirement can be met only if the allotment of the interested administration, or part of this allotment, has been converted into an assignment, or if the requirement cannot be met by the conversion of the allotment into an assignment; b) which requires the use of all or part of its national allotment that has been suspended in accordance with Art. L, para. 216; c) which intends to participate in a subregional system using the procedures of Section III of Article L, instead of using the procedures of Section II thereof."

period of validity of 15 years and will not, unless agreed to by the affected administrations, require any displacement of the orbital position of an allotment in Part A of the Plan or the orbital position of an assignment in the list, nor be incompatible with: the allotments in the Plan, the assignments in the list, the assignments that have initiated action pursuant to Article L.[193]

Once the relevant procedure of Article L has been successfully applied the assignment is to be notified to the Board in accordance with Article 13 of the Radio Regulations.[194]

The 1988 Plan has more flexibility than either of the BSS plans. This flexibility is provided through the use of generalized parameters[195] and the PDA concept.[196]

The generalized parameters permit the use of a range of system specifications when the system is being implemented. So long as the allotment's technical parameters fall within its envelope of generalized parameters and the allotment is otherwise in accordance with the Plan, no coordination is

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193. Appendix 30B, Art. L, para. 302.

194. Ibid., Art. M.

195. Generalized parameters are ranges of technical parameters that specify the interference-producing capability and interference sensitivity of a satellite network.

196. The PDA is a segment of the geostationary orbit about a nominal orbital position. The size of the PDA depends upon the stage of development of the satellite system. In the pre-design stage, the PDA is plus or minus ten degrees about the nominal orbital position established at the Conference. After the plan has been in effect for 20 years, the size of this PDA is increasing to plus or minus 20 degrees as long as other criteria can still be met. In the design stage, the PDA is plus or minus five degrees about the nominal orbital position as may be modified by the application of the procedures. In the operational stage, the PDA is zero. (Appendix 30B, Art. J. para. 103 (a).).

necessary.[197]

The PDA concept establishes the Plan as an allotment plan, as opposed to an assignment plan with fixed and rigid orbital locations. When the concept is applied to assist in the implementation of an assignment, an administration will not be considered to be affected if its nominal orbital position is moved within the associated PDA and the aggregate C/I is maintained at 26 decibels or more. The PDA concept may be applied to provide an allotment to a new ITU member, to help convert an allotment into an assignment, to accommodate a subregional system, or to resolve incompatibilities with existing system or with assignments in the list.[198] However, the PDA concept cannot be applied to assist in the implementation of an additional use.

4. Intelsat

Intelsat was established in 1964 by an "Agreement Establishing Interim Arrangements for a Global Commercial Communications Satellite Consortium", which was superseded by the Intelsat definitive arrangements, concluded in 1971 and in force since 1973.[198A]

Its prime objective is the provision on a non-discriminatory basis, of the space segment required for international public telecommunications services by means of a single global system using the most advanced technology available.

Through an economic policy of global price averaging, Intelsat has ensured

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197. Supra, footnote 92, at p. 173.

198. Appendix 30B, Art. J, para. 104.

198.A The Agreement Relating to the International Telecommunication Satellite Organization "Intelsat", 23:4 U.S.T. 3813 (1972).

affordable communications on a worldwide basis. To accomplish this, Intelsat takes revenues derived from high-traffic routes and subsidizes the less profitable traffic routes that interconnect geographically isolated and/or developing nations.[199]

Domestic public telecommunications services between areas separated by areas not under the jurisdiction of the state concerned, or between areas separated by the high seas; and domestic public telecommunication services between areas which are not linked by any terrestrial wideband facilities and which are separated by natural barriers of such an exceptional nature that they impede the viable establishment of terrestrial wideband facilities between such areas are considered on the same basis as international public telecommunication services.[200] Furthermore, the Intelsat space segment may also be utilized for other domestic public telecommunication services[201] as well as for specialized telecommunication services (either international or domestic)[202], provided the ability of Intelsat to achieve its prime object is not impaired. In addition, Intelsat may provide satellites or associated facilities separate from the Intelsat space segment for domestic, international and specialized services provided that the efficient and economic operation of the Intelsat space segment is not

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199. Gershon, R.A., Global Cooperation in an Era of Deregulation, Telecommunications Policy, June 1990, 249, at. 249.

200. Agreement relating to the International Telecommunications Satellite Organization "Intelsat", signed on 20 August 1971, entered into force on 12 February 1973, Art. III (B) (i) and (ii).

201. Ibid., Art. III (c).

202. Ibid., Art. III (d).

unfavorably affected in any way.[203]

Almost 180 countries, territories, and dependencies now access the Intelsat system via more than 2,200 separate communication pathways for international telephone, television, facsimile, and data communications. As of April 1990, the Intelsat system carried 119,639 full-time channels and over 100 full-time leases for television, domestic and specialized business application, submarine fiber optic and analog cable restoration, capacity for Inmarsat, and capacity for UN peacekeeping operations. 40 nations currently use the Intelsat system for domestic telephone and television.[204]

Determination of the rights and obligations of Intelsat members with respect to satellite systems separate from Intelsat was a major issue in negotiation of the Intelsat definitive arrangements. Varying views were put forth on the nature of the obligations which governments and their designated telecommunication entities should undertake. These views ranged from total freedom to establish or participate in separate systems to the requirement that all Intelsat members utilize only the Intelsat system for international services and, possibly, other services as well. One of the major concerns was the possibility of economic harm to the Intelsat system if numerous separate systems were established by Intelsat members. There was also concern that Intelsat's objective of the establishment of a global system serving all areas of the world might be impaired by a proliferation of separate systems which would place increased demands on the scarce resources of the orbital arc and the radio

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203. Ibid., Art. III (e).

204. Intelsat Report 1989-90, at p. 5-7.

frequency spectrum.[205]

Article XIV of the Intelsat Agreement reflects a compromise according to which satellite systems separate from Intelsat are allowed, but subject to coordination requirements, which depend upon the type of service which is sought to be provided.

The purpose of article XIV is to preserve Intelsat's ability to provide space segment capacity to serve the telecommunications requirements of its members and users on the basis of non-discriminatory rate structures while ensuring global interconnectivity.

Under article XIV (c) any Party or Signatory or person within the jurisdiction of a party wishing to establish, acquire or utilize space segment facilities separate from the Intelsat space segment facilities to meet its domestic public telecommunication service requirements, shall prior to the establishment, acquisition or utilisation of such facilities, consult the Board of Governors in order to assure technical compatibility of such facilities and their operation with the use of the radio frequency spectrum and orbital space by the existing or planned Intelsat space segment. The Board of Governors shall express its findings in the form of recommendation.

Article XIV (d) applies in the case of space segment facilities intended to meet the needs of international public telecommunications services.[206] It

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205. Colino, R., International Cooperation Between Communications Satellite Systems: an Overview of Current Practices and Future Prospects, 5, J. Space L., 1977, 65, at p. 76-77.

206. Intelsat Agreement, Art. I (k): "Public telecommunications services" means fixed or mobile telecommunications services which can be provided by satellite and which are available for use by the public, such as telephony, telegraphy, telex, facsimile, data transmission, transmission of radio and television programs between approved earth stations having

requires Intelsat members to furnish all relevant information and to consult with the Assembly of Parties, through the Board of Governors in order to ensure technical compatibility of such facilities and their operation with the use of the radio frequency spectrum and orbital space by the existing or planned Intelsat space segment; to avoid significant economic harm to the global system of Intelsat; and to ensure that such facilities shall not prejudice the establishment of direct telecommunication links through the Intelsat space segment among all the participants.

Specialized telecommunications services[207], both domestic and international, are coordinated pursuant to article XIV (e). Article XIV (e) requires Intelsat members to furnish all relevant information to the Assembly of parties, through the Board of Governors, in order to ensure technical compatibility of such facilities and their operation with the existing and planned Intelsat space segment.

The Assembly of Parties, under Article XIV (d) and (e), or the Board of Governors under Article XIV (c), shall express its findings in the form of recommendations within a period of six months from the date of commencing

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access to the Intelsat space segment for further transmission to the public, and leased circuits for any of these purposes; but excluding those mobile services of a type not provided under the interim Agreement and the Special Agreement prior to the opening for signature of this Agreement, which are provided through mobile stations operating directly to a satellite which is designed, in whole or in part, to provide services relating to the safety or flight control of aircraft or to aviation or maritime radio navigation.

207. Intelsat Agreement, Art. I (l): "Specialized telecommunications services" means telecommunications services which can be provided by satellite, other than public telecommunications services, including, but not limited to, radio navigation services, broadcasting satellite services for reception by the general public, space research services, meteorological services, and earth resource services.

the procedures provided for in the foregoing paragraphs.[208] The wording of the Intelsat Agreement suggests that the findings are not binding. However, there is no precedent on the application of Article XIV, because Intelsat has never rejected a system on the basis of a possible violation of this article.[209]

Procedures for the application of article XIV, for both technical and economic (non-technical) assessment were adopted at the Fifth Meeting of the Board in 1973. The procedures for non-technical assessment were revised and expanded at the Board's Twenty-eight Meeting in 1977.[210] These procedures remained in effect until the Board, as a consequence of the significantly increased number of requests for consultation, adopted new, more detailed non-technical assessment procedures at its Sixty-fourth meeting in 1985.[211] The new procedures posed an extensive set of questions to be addressed with respect to the potential of a separate system for causing significant economic harm and impairment of the establishment of direct links. The question were designed not to produce a conclusive answer on the issue of significant economic harm, but simply to provide the information required by the Board and the Assembly of Parties to reach a conclusion on a judgemental, case-by-case basis. The procedures did not attempt to define significant economic harm in discrete, numerical values.

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208. Intelsat Agreement, Art. XIV (f).

209. Speck, P.K., Competition in International Satellite Telecommunications: alternative Avenues, 20, Texas International Law Journal, 1985, 517, at p. 532-535; Lyall, F., Space Telecommunication Organizations and the Developing Countries, 32, Colloquium, 1989, 242, at p. 245.

210. BG-28-63.

211. BG-64-80 (Rev. 1).

At its sixteenth meeting, the Assembly of Parties determined that a separate system proposed to carry traffic not interconnected to the public switched network which at no point during the period of coordination is forecast to reach above the specified threshold of thirty 36 MH_z equivalent transponders for international services, does not cause significant economic harm to the Intelsat system and is not subject to further economic harm assessment under Article XIV (d).[212]

Moreover, it decided that the procedures and guidelines for non-technical consultation pursuant to Article XIV (d) will be performed in accordance with document AP-16-20 and its Attachment No. 1, which provide:

> "In assessing the economic impact on Intelsat of separate satellite facilities for international public telecommunications, principal indicators should be the impact of projected Intelsat space segment costs and utilization charges, Intelsat planning and operations, and under certain circumstances the resulting impact of Signatories investment and compensation for the use of capital. This impact should be assessed on the basis of the estimated diversion of traffic from the Intelsat system and should be considered against the following questions:
>
> - Are the services public international services as defined in Article I (k) of the Intelsat Agreement?
> - Can the service be provided using the Intelsat global system which comprises:
>   - existing space segment (including normal replacement);
>   - new space segment which is under procurement; and
>   - planned space segment.
> - In the absence of the proposed system, would the traffic have been carried by Intelsat?
> - Will the proposed system stimulate additional demand? If yes, is the quantity material (say

212. AP-16-4E Final L/10/90, Intelsat Assembly of Parties Summary Minutes of Discussions, Sixteenth Meeting, 1 November, 1990, at p. 80.

10%) related to the proposed system's total traffic?
- Is the traffic likely to be affected by the price elasticity of demand? If yes, how can this be quantified?
- How much traffic carried on Intelsat switched networks will be diverted to non-interconnected private lines carried on the proposed system?
- What is the estimated effect on Intelsat utilization charges both in the short and long term?
- What is the estimated effect on the compensation for the use of capital?
- What is the estimated effect on Intelsat planning and operations including the economic cost of the technical and operational constraints accepted by Intelsat in coordinating the proposed system in those instances in which the economic cost of those constraints can be clearly identified?
- What is the estimated effect on the other Signatories' investment of the proposed separate system in terms of variations in the proportion of total investment shares resulting from any decrease in the proposing Signatory's investment share and consequent changes in space segment investment requirements, if any?

Other factors for assessing economic harm may be relevant on a case-by-case basis, including:

- Variables which affect Intelsat's ability to earn sufficient revenue to cover the cost of providing services;
- Intelsat's current financial condition;
- Intelsat's overall growth opportunities and options for responding to competitive systems;
- The effect of service restrictions that are placed on separate satellite systems; and
- Expanded use of the separate system, to be considered only at a subsequent consultation for expanded use of a system previously consulted, rather than at the first consultation."[213]

Competition was not an issue in Intelsat's formative years. The novelty

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213. AP-16-20E, L/10/90, 26 September 1990, The Report of the Board of Governors to the Sixteenth Assembly of Parties on its Review of Article XIV (d) Non-Technical Consultation Procedures., Attachment No. 1, at p. 1-3.

of its technology, the modest extent of its traffic streams and presence of economies of scale combined to create the presumption, before and during Intelsat's creation and early years of operation, that competition would be economically inefficient and politically divisive.[214]

From its very beginning Intelsat has enjoyed a near monopoly status in the delivery of international satellite communications.

Since 1980 there has been a worldwide shift towards economic deregulation of domestic and international business. Several countries, notably the US, the UK and Japan, have undergone major deregulatory and pro-competitive changes in their approach to telecommunication.[215]

The movement for introducing competition in the telecommunication services is spreading at a time when satellite technology and the spacecraft industry have matured and the establishment of parallel separate systems catering to fast evolving new markets has become feasible as a competitive choice.[216]

Intelsat faces new competitive challenges from two distinct sources: private satellite systems and the continued deployment of sub-oceanic fibre-optic cable by a consortium of international common carriers.

Along with these changes has come a change in attitude regarding the future role of Intelsat as the world's foremost carrier of satellite communication services.[217]

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214. Supra, footnote 29, at p. 16.

215. Supra, footnote 119, at p. 250.

216. Supra, footnote 213, at p. 11.

217. In the early days of Intelsat, when the system was substantially smaller than it is today, when there was much uncertainty about demand and when global connectivity was not fully implemented, a small account of

Intelsat has already taken steps to adjust to the demands of large corporate users by introducing a host of new telecommunication services designed to offset the effects of international deregulation. It offers two private network services, Intelsat Business Services and Intelnet, to meet the demand of the business community for high quality, end-to-end wide-band digital communication.[218]

The Intelsat future satellites will undergo some major transformations, including changes in technical design as well as application. The result of these developments will greatly increase system access making it easier for end users to access the space segment directly from their premises.[219]

Intelsat's strategic plan formalizes objectives and initiatives aimed at taking Intelsat forward during this period of rapid sweeping changes.

The plan seeks to achieve the continued health and viability of Intelsat by the following strategies:

> "- Commitment by the members to Intelsat by making it in their economic and operational interest to continue to use Intelsat as opposed to alternatives;
> - Giving the members the tailored, reliable and efficiently priced capacity they need to be stronger competitors and better providers of

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traffic diversion would have caused an economic harm to the Intelsat system relatively much greater than the same diversion would cause today. Consequently, the assessment of economic harm to the Intelsat system had to be done conservatively and safeguards recommended for all services in order to allow the harmonious development of the system. Today, the Intelsat system has grown and global connectivity has been established and is recognized characteristic of the system. These facts provide Intelsat with the flexibility to consider a review of the scope of the application of Article XIV (d).

218. Supra, footnote 204, at p. 14.

219. Supra, footnote 119, at p. 257.

> telecommunications services so that their customers are not attracted to alternatives;
> - Using new incentive pricing and lor -term commitment policies to make diversion c. .. 'fic by members and their customers less attractive to them, and by developing mechanisms for stimulating member and customer use of the Intelsat system."[220]

The proposals for simplification of procedures under Article XIV (d) are based upon strong support and commitment by parties and signatories to implement the strategic plan. In the new telecommunication environment, article XIV (d) remains a useful tool to Intelsat, and the consultation process provides Intelsat with information useful in the future planning of Intelsat global system. But it is not intended to, and should not be used to impose barriers to entry by other satellite systems. In fact, the net effect of the proposed changes to the economic harm methodologies is to make the analysis more realistic, and without any assumption, explicit or implicit, that Intelsat is "entitled" to a certain portion of international traffic.[221]

The growth in the number of requests for consultation under article XIV (d) in the last decade and particularly in the last six years has placed a very substantial administrative, time consuming and costly burden on the Executive Organ, the Board of Governors and the Assembly of Parties, and on the proponents of separate system themselves. From 1973 until 1980, the Board of Governors and the Assembly of Parties dealt with a total of 17 networks consulted pursuant to article XIV (d), with the Assembly of Parties being required to convene one extraordinary meeting in 1979. From 1981 through

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220. Supra, footnote 213, at p. 12.

221. Ibid.

1989, the Board and the Assembly dealt with additional 389 networks consulted or reconsulted pursuant to article XIV (d). To accommodate the six-months time limit requirement of article XIV (f) of the Intelsat Agreement, five extraordinary meetings of the Assembly of Parties were convened in addition to the six ordinarily meetings scheduled during the same period.[222]

Given the volume of coordination requests that Intelsat has been asked to process in recent years, efforts have been focused on ways to shorten and simplify the consultation process while still meeting the goals of article XIV.

At its Twelfth Meeting, held in October 1987, the Assembly of Parties decided to authorize the Board of Governors to make findings in the form of recommendations on behalf of the Assembly of Parties under article XIV (d) of the Intelsat Agreement, when there is a short term unexpected and urgent need to use a separate system. Furthermore, the Assembly of Parties authorized the Director General to make findings in the form of recommendations on behalf of the Assembly of Parties under article XIV (d), when there is a short term unexpected and urgent need to use a separate system to meet communications requirements in connection with disasters and natural catastrophes involving safety of life and when time does not permit resource to the Board.[223]

The Assembly of Parties decided, in October 1988, at its Thirteenth Meeting, to authorized the Board to act on its behalf under article XIV (d), in those instances when a request is received for an additional country to be associated with a previously concluded consultation under article XIV (d)

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222. Ibid., at p. 9-10.

223. AP-12-3.

concerning a separate system.[224]

At its Fifteenth Meeting, held in October 1989, the Assembly of Parties decided to further authorize the Board of Governors to act on the Assembly's behalf, under article XIV (d): - in those instances when a request is received for incidental reception in one country of existing domestic satellite services carried by another country's domestic satellite network(s) previously coordinated only under article XIV (c) of the Intelsat Agreement. This authorization is limited to requests involving one-way television, audio and data transmissions normally carried in the domestic satellite network(s); and - in those instances when a request is received to extend the period of a previous consultation in which there is no change in the technical and non-technical elements upon which the original Assembly of Parties findings are based. The Board was also authorized to act on the behalf of the Assembly of Parties for all requests under article XIV (e) of the Intelsat Agreement. Moreover, the authorization given to the Director General to make findings on behalf of the Assembly of Parties under article XIV (d) when time does not permit recourse to the Board of Governors, was expanded so as to include those instances when there is a short-term, unexpected and urgent need to use a separate system to meet telecommunications requirements and the Director General determines that adequate facilities are unavailable to carry the service on the Intelsat system.[225]

Finally, at its sixteenth meeting, held in November 1990, the Assembly of Parties decided to authorize the Board of Governors to act as behalf of the Assembly under article XIV (d): - regarding the question of significant economic

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224. AP-13-3.

225. AP-15-3.

harm with respect to separate systems intended to carry traffic interconnected to the public switched network which at no point during the period of coordination is forecast to reach above the specified threshold of one hundred 64 Kbits equivalent circuits; - in cases of reconsultation where there are material changes to the technical aspects of previous consultation(s), but where the non-technical aspects remain unchanged; - with respect to separate systems intended to carry satellite services other than fixed-satellite services; - regarding the technical assessment and the "direct links" test in those cases in which the Board is authorized to make findings regarding the economic harm assessment, as well as in cases which are no longer subject to the significant economic harm assessment under article XIV (d).[226]

However, in all the above instances Parties and Signatories may still request a full article XIV (d) review by the Assembly of Parties at any time during the consultation process.

5. Inmarsat

The Convention that established the International Maritime Satellite Organization (INMARSAT) was signed in 1976 and came into force in 1979.[226] Inmarsat became operational in February, 1982.

The original purpose of Inmarsat was "to make provision for the space segment necessary for improving maritime communications, thereby assisting in improving distress and safety of life at sea communications, efficiency and

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226. AP-16-4E Final L/10/90, Intelsat Assembly of Parties Summary Minutes of Discussions, Sixteenth Meeting, 1 November, 1990.

226.A The Convention on the International Maritime Satellite Organization "Inmarsat", 31:1 U.S.T. 1 (1979).

management of ships, maritime public correspondence services and radiocommunication capabilities."[227] However, at the Fourth Session of the Inmarsat Assembly, held in October 1985, various amendments were adopted to the Inmarsat Convention and operating agreement. The effect of these amendments is to confer on Inmarsat the competence to provide aeronautical satellite telecommunications.[228] In January 1989, an extraordinary session of the Inmarsat Assembly adopted further amendments to the Convention and operating agreement. They gave Inmarsat the competence to provide land mobile satellite communications.[229]

Membership in Inmarsat is open to all nations. Moreover, the Inmarsat space segment is available for use by ships of all nations.[230] The Inmarsat constituent instrument allow for considerable flexibility in the provision of communications services. There is no requirement or restriction as to the geographical basis on which Inmarsat services may be provided: these may therefore be international, regional or domestic. There is no explicit requirement about the classes of users to whom services can be provided, so that services may be offered either to the public or to particular user groups.[231]

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227. The Inmarsat Convention, Art. 3 (1).

228. Noorden, W.D., Space Communications to Aircraft: A New Development in Interactional Space Law, (Part I), 15, J. Space L., 1987, 25, at p. 25.

229. Noorden, W.D., and Dann, P., Land Mobile Satellite Communication: a Further Development in International Space Law, (Part I), 17, J. Space L., 1989, 1, at p. 2.

230. The Inmarsat Convention, Art. 7 (1).

231. Supra, footnote 229, at p. 9.

Inmarsat may own or lease the space segment.[232] While Inmarsat initially leased transponder capacity on three satellites, it has planned to launch four of its own geostationary satellites in 1990.[233]

Inmarsat has a limited degree of protection from competition under article 8 of the Inmarsat Convention. If a party or any person within its jurisdiction intends to make provision for, or initiate the use of separate space segment facilities to meet any or all of the maritime purposes of the Inmarsat space segment, it must notify Inmarsat to ensure technical compatibility and to avoid significant economic harm to the Inmarsat system. The consultation procedure under article 8 is not required in respect of space segment facilities providing aeronautical or land mobile satellite services.[234] The Inmarsat Council is to make a recommendation with respect to technical compatibility and the Assembly is to make a recommendation with respect to economic harm. Both such recommendations are of a non-binding nature.[235]

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232. The Inmarsat Convention, Art. 6.

233. Supra, footnote 92, at p. 31.

234. Noorden, W.D., Space Communications to Aircraft: A New Development in International Space Law, Part II, 15, J. Space L., 1987, 147, at p. 151-512; Noorden, W.D., and Dahn, P., Land Mobile Satellite Communication: A Further Development in International Space Law, Part II, 17, J. Space L., 1989, 103, at p. 109.

235. The Inmarsat Convention, Art. 8 (1) and (2).

CHAPTER III : ACCESS TO THE GEOSTATIONARY ORBIT BY INTERNATIONAL ORGANIZATIONS

A. International Space Law

International organizations, if certain conditions exist, represent legal persons on the international plane.

The criteria of legal personality in organizations are the following: 1) a permanent association of states, with lawful objects, equipped with organs; 2) a distinction, in terms of legal powers and purposes, between the organization and its member states; 3) the existence of legal powers exercisable on the international plane and not solely within the national systems of one or more states.[1]

International organizations, such as Intelsat, Inmarsat, Intersputnik, etc., are international legal persons.

The provisions of the 1967 Outer Space Treaty apply to space activities where they are carried on within the framework of international inter-governmental organizations.[2] However, not being parties to the Treaty, international organizations cannot avail themselves of the so-called diplomatic clauses of the Treaty such as signature, ratification, adhesion, amendments, withdrawal, official languages and revision, as these aspects are considered to fall within the competence of states parties to the Treaty.[3]

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1. Brownlie, I., Principles of Public International Law, third edition, Clarendon Press, Oxford, 1979, at p. 679.

2. The Outer Space Treaty, 1967, Art. XIII (1).

3. Matte, N.M., (ed.), Space Activities and Emerging International Law, CRASL, McGill University, 1984, at p. 314.

All space law agreements concluded subsequent to the Outer Space Treaty extend the application of their provisions to international inter-governmental organizations if a majority of their members have signed and ratified both the Outer Space Treaty and the agreement in question, and if the organization declares acceptance of the rights and obligations provided for in the agreement. The effect of the declaration is not equivalent to adherence to the agreement in its totality. It merely confers on the organization the rights resulting from the agreement and subjects it to the obligations which are contained therein. International organizations active in the field of telecommunications have, to date, not made declarations of acceptance.[4]

B. International Telecommunication Law

The ITU Convention affords rights and recognition with respect to frequency and geostationary orbit use only by the sovereign countries that comprise its membership. Even though common user organizations are the major providers of satellite services, whose requirements for orbital locations may be more constrained by geographical locations of various users of the system than would be the case of some national systems, they are not eligible for ITU membership and have no direct administrative or legal representation within the ITU. Common user organizations may attend Administrative Conferences and CCIR meetings as observers, but they do not have the right to participate, or to voice their concern. Their interests in the coordination and notification

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4. Ibid.

processes are handled by individual nations known as Notifying Administrations.[5] The Radio Regulations make express provision for advance publication, coordination and notification of satellite systems by individual administrations on behalf of a group of administrations. The Radio Regulations recognize international systems only as coalitions of individual states, rather than in their juridical capacity.

For example, the Intelsat Board of Governors is empowered to adopt decisions concerning notifications to the ITU of the frequencies to be used for the Intelsat space segment. However, for purposes of inter-system coordination, Intelsat decisions must be conveyed to the ITU by the US, which serves as a notifying administration, acting in the name and on behalf of a certain number of Intelsat administration, rather than on behalf of the organization.[6] Radio frequencies and orbital positions for all Intelsat satellites are registered, in the name of the US, in the Master International Frequency Register. It is the US which is entitled to the rights, and subje ' ' the obligations which ensue from such registration, and not Intelsat, the real c.ner and operator of the satellites, which has a legal personality distinct from that of the US.[7]

For their part, international organizations charged with the governance

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5. Smith, M.L., International Regulation of Satellite Communication, Kluwer Academic Publishers, 1990, at p. 29.

6. Levy, S.A., Institutional Perspectives on the Allocation of Space Orbital Resources: The ITU, Common User Satellite Systems and Beyond, 16, Case Western Reserve J. of Int. L., 1984, 171, at p. 191-192; Colino, R., International Cooperation Between Communications Satellite Systems: an Overview of Current Practices and Future Prospects, 5, J. Space L., 1977, 56.

7. Jakhu, R., The Legal Regime of the Geostationary Orbit, D.C.L. Thesis, McGill University, 1983, at p. 223.

of multilateral systems have adapted to the ITU regime. In same cases, organizations have adjusted their internal procedures to conform with ITU's consensual mode of decision-making, giving nations a unilateral veto over joint action. For ITU purposes they thereby eschew more authoritative roles even though a majority rule otherwise governs their collective undertakings.[8]

A priori orbit and spectrum assignment prior to WARC-ORB-85 failed to recognize the needs and requirements of common user systems for access to orbit and spectrum resources necessary to satisfy the common and dedicated service requirements of their member states.[9]

WARC-ORB-85 decided to take into account requirements of the Multi-Administration Systems in the planning process by the Second Session of the WARC-ORB.[10] It adopted the following provision:

> "3.2.6. provisions for multi-administration systems
>
> a) The planning method shall take into account the requirements of administrations using multi-administration systems created by intergovernmental agreement and used collectively without affecting the rights of administrations with respect to national systems.
>
> b) The planning method shall take account of the specific characteristics of multi-administration systems in order to enable them to continue to meet the requirements of administrations for international services as well as, in many cases, for national services.

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8. Levy, S.A., Institutional Perspectives on the Allocation of Space Orbital Resources; the ITU, Common User Satellite Systems and Beyond, 16, Case Western Reserve J. of Int. L., 1984, 171, at p. 191.

9. Ibid., at p. 177.

10. Leive, D.M., International Telecommunications and Satellite Systems II: Intelsat, International Business Lawyer, 1987, 316, at p. 319.

> c) It is understood that these multi-administration systems include those having a safety-of-life aspect (some national systems serve the same purpose) and having feeder links in the FSS."[11]

The provision of paragraph 3.2.6 of the Report created no preference or priority for multi-administration systems over national systems.[12] Its guarantees are not available to mere common user systems[13], but only to multi-administration systems.[14]

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11. WARC-ORB-85, Report to the Second Session of the Conference, 1985, ITV.

12. Jakhu, R., A. Legal Analysis of the 1985 ITU Space Conference Report, 29, Colloquium, 1986, 103, at p. 107.

13. The systems owned and operated by, or under the regulatory control of, one (or two) state(s) but whose services/transponders are used/leased by another state(s) or its/their public or private entities under agreement(s) with their owners are merely common user systems. All national systems leasing or renting their capacity internationally, as does PALAPA system of Indonesia, are covered under this definition.

14. Multi-administration systems are those systems which are owned and operated by global or regional organizations whose member states cooperatively share in telecommunications facilities and in joint decision-making. These systems can be used for international and/or domestic requirements. Organizations such as Intelsat, Inmarsat, Eutelsat, Arabsat, which are owned and operated by cooperative organizations and have their own international legal personality distinct from that of their member states, are such systems.

CHAPTER IV : ACCESS TO THE GEOSTATIONARY ORBIT BY NON-GOVERNMENTAL ENTITIES

A. International Law

Under article VI of the 1967 Outer Space Treaty, states parties to the Treaty bear international responsibility for national activities in outer space carried on by non-governmental entities, and for assuring that such activities are carried out in conformity with the provisions set forth in the Treaty. The activities of non-governmental entities in outer space require authorization and continuing supervision by the appropriate state party to the Treaty.

B. The U.S. Legislation

1. Policy on International Satellite Systems

(i) Comsat's Role

One of the primary expressions of U.S. policy on international commercial satellite systems is the Communications Satellite Act of 1962.[1] It declared the intention of the U.S. to establish a global communications satellite system in conjunction and in cooperation with other countries.[2] The Act created the Communications Satellite Corporation (Comsat), a private corporation regulated by the government, as the sole U.S. participant in the development and operation of the international telecommunications system.[3]

The outcome of this national initiative was the International

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1. 47 U.S.C., S. 701 et Seq.
2. Ibid., S. 701 (a).
3. Ibid., S. 731 et Seq.

Telecommunications Satellite Organization (Intelsat). It was established in 1964 under the Interim Arrangement.[4] The Interim Arrangement was subsequently superseded by a definitive Intelsat agreement[5], which was reached in 1971, and which became effective in 1973. Intelsat prime objective is the provision of a space segment required for international public telecommunications services on a commercial basis.[6]

The structure of the international system, and the role Comsat would play in that system resulted from the belief in the early 1960's that technological and economic realities would allow the development of only one global system in the foreseeable future.

For years Comsat has enjoyed a monopoly over the U.S. satellite market. However, this monopoly has been eroded by the dynamics of the satellite market and by rulings of the FCC. The FCC has developed two exceptions to the general rule that all international satellite communications are to be carried by the Intelsat system. The first is the "transborder policy."[7] The second is the "separate systems policy."[8]

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4. Aug. 20, 1964, [1964] 15 U.S.T. 1705, T.I.A.S. No. 5646, 514 U.N.T.S. 26.

5. Agreement Relating to the International Telecommunications Satellite Organization "INTELSAT", Aug. 20, 1971 [1972] 23 U.S.T. 3813, T.I.A.S. No. 7532 (effective Feb. 12, 1973).

6. Article III (a) of the Intelsat Agreement.

7. 88 FCC 2d 258, 1981, (FCC 81-492), Transborder Satellite Video Services.

8. Vol. 50, Federal Register, 1985, [CC Docket No. 84-1299; FCC 84-632], Establishment of Satellite Systems providing international communications, Notice of Inquiry and Proposed Rulemaking, p. 1571-82. Vol. 50, Federal Register, 1985, [CC Docket No. 84-1299; FCC 85-399], Satellite Systems providing international Communications, Report and Order, p. 42266-317. Vol. 51, Federal Register, 1986, [CC Docket 84-1299; FCC 86-144], Common Carrier: Reconsideration of Establishment of Separate Satellite

When the first Intelsat satellite was launched in 1965, it became clear that satellites would cost considerably less to operate than cables. However, some interests had strong reasons for protecting cables. The European PTTs have traditionally favored cables, because Europe, and especially Great Britain, led in the development of the technology. In addition, the European felt that their ownership of "half-circuits" in each cable gave them greater control of that medium than their membership in Intelsat gave them over satellites. The U.S. also wished to maintain undersea cables. The U.S. Department of Defense and the FCC feared that, if satellites eliminated the use of cables, there would be no back-up to restore vital services lost in time of war or natural disaster. Furthermore, certain common carriers, particularly AT&T, wished to protect their cable investments. They had little motivation to switch from one medium to another because the FCC's system of "rate-base regulation" allowed them to receive, after accounting for operating expenses, a certain rate of profit calculated as a percentage of their total investment in equipment.[9]

Believing such action necessary to advance satellite technology and to develop backup transmission facilities, the FCC originally regulated the allocation of traffic between cables and satellites to assure that adequate capacity would be available, that there would not be excess capacity, and that satellite facilities would be effectively used. This regulation included approval of plans for cable

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Systems for International Communications, Memorandum Opinion and Order on Reconsideration, p. 17631. Vol. 51, Federal Register, 1986, [CC Docket No. 84-1299; FCC 86-471] Common Carrier Services; Establishment of Satellite Systems providing international Communications, Denying petition for Reconsideration, p. 44478.

9. Speck, P.K., Competition in International Satellite Telecommunications: Alternative Avenues, 20, Texas I.L.J., 1985, 517, at p. 550-551.

facilities, determination of the traffic balance between cable and satellite facilities, and authorization to use circuits for either cable or satellite facilities.[10] Furthermore, a composite rate policy insulated international telecommunication services from the effects of customer demand. In a composite rate, carriers average the cost of serving a particular route by cable and by satellite. Therefore, customers sending international messages receive a portion of the benefit of lower cost satellite service regardless of the actual method of transmission.[11]

Over the years, the FCC has gradually limited its activities in this capacity, and has become primarily an overseer in the international facilities planning process. With regard to facilities planning in the North Atlantic Region, the FCC, the foreign entities and U.S. carriers have been involved in a formal arrangement known as the North Atlantic Consultative process; this entails an informal, international exchange of planning information and policy views concerning both cable and satellite facilities.[12]

By the late 1970's, many of the assumptions underlying the "balanced loading" policy had been discarded. The introduction of fiber optic technology raised a realistic possibility that cables could compete with satellites in an unregulated arena. As a result, applications for permits to construct new cables have multiplied. FCC orders permitting separate charges for satellite and cable

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10. Godwin, The Proposed Orion and ISI Transatlantic Satellite Systems: A Challenge to the Status Quo, 24, Jurismetrics, 1984, 297, at p. 303.

11. Sarreals, International Telecommunications Satellite Services: The Spirit of Cooperation versus the Battle for Competition, 26, Jurismetrics J., 1986, 267, at p. 276.

12. Supra, footnote 10, at p. 304.

services, user access to Comsat and the entry of new long-distance providers have made it possible for users to compare the two media and to exercise a choice. Because of these changes, and the adoption of a general U.S. policy seeming to replace regulation with market mechanism, in 1979 the FCC announced an inquiry into the possibility of phasing out its control of the North Atlantic cable-Satellite mix between 1985 and 1995.

Unable to decide on a long-term policy, the FCC, in August 1985, announced a transitional plan covering the years 1986 to 1988. The plan affected only AT&T, which carries the majority of transatlantic telephone calls, and allowed it to vary its cable-satellite mix by two percent each year.[13]

In 1988 the Commission decided to end imposition of circuit distribution guidelines for the following reasons: 1) circuit distribution guidelines that guarantee Intelsat minimum level of traffic have served their purpose and are no longer needed to carry out the objectives of the Communications Satellite Act of 1962; 2) a continued regulatory policy that acts to merely guarantee traffic to Intelsat creates disincentives for it to take steps necessary to adapt to an increasingly competitive environment; and 3) continuation of guidelines would be inconsistent with development of a policy that permits carriers and users to make facilities and service decisions free from unnecessary regulatory interference.[14]

The Comsat/AT&T agreement provides a basis for ending all circuit

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13. Speck, P.K., Competition in International Satellite Telecommunications: Alternative Avenues, 20, Texas I.L.J., 1985, 517, at p. 551-552.

14. 3 F.C.C. Rcd., No. 8, 1988, [CC Docket No. 87-67; FCC 88-122], Policy for the Distribution of U.S. International Carrier Circuits Among Available Facilities During the Post-1988 Period, Report and Order, p. 2156, at p. 2160.

distribution guidelines. The agreement requires AT&T to maintain an Intelsat a year-end 1987 base level of 20,099 voice-grade satellite circuits and an average of 34 percent of its global IMTS and 800 service growth traffic during each calendar year for 1988 through 1994. Also, AT&T may activate additional satellite circuits during the period if necessary to meet its needs. AT&T had agreed not to reduce the number of circuits obtained pursuant to this agreement before 1995, unless it experienced a global decrease in IMTS requirements. The agreement also notes that AT&T's stated intentions and plans entail substantial use of Comsat capacity for IMTS after 1994.[15]

The Commission found that the agreement assures Intelsat of a substantial amount of AT&T traffic in the future which will provide a firm basis for Intelsat's operations, and at the same time, give AT&T flexibility in making circuit distribution decisions in the face of growing competition. Moreover, the agreement provides both Intelsat and Comsat incentives to adapt to an increasingly competitive environment in the provision of international transmission facilities.[16]

The Intelsat global satellite system is composed of a space segment and a ground segment. The space segment consists of communications satellites and related equipment necessary to operate these satellites, all of which is owned by Intelsat. The ground segment consists of various earth stations, located throughout the globe, which transmit and receive signals from Intelsat satellites. The earth stations generally are owned and are operated by the telecommunications entities of the countries in which they are located.

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15. Ibid., at p. 2158-9.

16. Ibid., at p. 2160.

Section 201 (c) (7) of the Communications Satellite Act of 1962 provides:

> "(c) the FCC, in its administration of the provisions of the Communication Act of 1934, as amended, and as supplemented by this Act [47 U.S.C., S. 701 et Seq.], shall ... (7) grant appropriate authorizations for the construction and operation of each satellite terminal station, either to the corporation or to one or more authorized carriers or to the corporation and one or more authorized carriers or to the corporation and one or more such carriers jointly, as will best serve the public interest, convenience, and necessity. In determining the public interest, convenience, and necessity the Commission shall authorize the construction and operation of such stations by communication common carriers or the corporation, without preference to either."[17]

Three types of ownership of initial earth stations were advocated: "a) exclusive ownership and operation by Comsat; b) joint carrier ownership, after Comsat plans, designs, and builds the stations; c) joint Comsat-carrier ownership with primary responsibility and authority in Comsat to plan, design, build, operate, and manage the stations."[18]

The most important consideration which underlined the choice to be made among the three possible courses of action was "the need to insure, so far as it is possible, that the earth stations will be available for use with the space segment of the system in order to provide global satellite service at the earliest practicable date." In order to discharge this responsibility, there was a need to provide a mechanism for 1) efficient and expeditions planning, construction, operation and control of the initial earth stations; 2) for resolving in a prompt and orderly manner all of the problems which are sure to arise; and 3) for

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17. 47 U.S.C., S. 721 (c) (7).

18. Federal Register, 1965, [Docket No. 15735; FCC 65-401], Earth Stations, p. 6862-8., at p. 6863.

effective coordination of U.S. efforts relating to both the space segment and earth stations with foreign participants in the entire systems.

The Commission found that the public interest considerations set forth above could best be served during the interim period by centralizing in Comsat responsibility for the design, construction, and operation of the initial earth stations. Therefore, Comsat was the sole licensee of the three initial earth stations. This policy was to remain in effect for two years from the date the first station license is granted unless amended, terminated, or extended by the Commission for good cause.[19]

Following the filing of numerous applications for additional earth stations, the FCC concluded that participation of the international service carriers would increase the incentives of the carriers to aid in the growth of satellite communications. Consequently, in 1966, the FCC changed its policy to allow joint ownership of all U.S. earth station facilities.[20]

Under the modified interim policy earth stations were jointly licensed to a consortium of carriers consisting of the Comsat and carriers who provide overseas communications service to the public in the U.S. Comsat had a 50 percent interest in each earth station. The remaining interest in each earth station was divided among other carriers in accord with their anticipated use of such stations during the term of the interim policy. Comsat acted as manager of such stations, subject to overall control and guidance on basic policy and investment matters by all joint licensees through a committee known as the

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19. Ibid., at p. 6864.

20. Federal Register, 1966, [Docket No. 15735; FCC 66-1133], Satellite Earth Station Ownership Policy, Second Report and Order, p. 15737-41.

Earth Station Ownership Committee (ESOC).[21] Voting shares within this committee were in accordance with ownership percentages. This policy was to remain in effect until the end of 1969 unless revised or amended for good cause because of new developments.

Under Intelsat's charter, Intelsat does not offer service directly to the end-users of communications services. Instead, it provides services to entities, public or private, designated by the government. Thus, individual governments determine how Intelsat's satellite services are provided and tariffed in their countries.[22]

Only Comsat, the U.S. signatory, is permitted to acquire ownership interests in Intelsat satellites. Comsat was intended by Congress to serve primarily as a carrier's carrier, that is, Comsat is to use its licensed facilities primarily to provide satellite capacity to other carriers which in turn will utilize such capacity, together with all of their other facilities, to furnish service to the using public.[23]

The provisions of S. 201 (c) of the Satellite Act delegate to the Commission positive power to assure equitable and nondiscriminatory access to

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21. Pursuant to the ESOC Agreement, ESOC earth stations were made available to Comsat for the purpose of furnishing earth station and space segment communications services under applicable tariffs to authorized carriers and users. Comsat, in turn, compensates the carriers for their investment by paying the ESOC owners a monthly rental rate for each half circuit established through the stations.

22. Leive, D.M., International Telecommunications and Satellite Systems II, Intelsat, 15, Int. Business Lawyer, 1987, 316.

23. Federal Register, 1966, [Docket No. 16058; FCC 66-677], Authorized Entities and Authorized Users, Memorandum Opinion and Statement of Policy, p. 10144-50.

the satellite system by communications common carriers.[24]

Comsat's tariff covers the provision of a satellite half circuit between a U.S. earth station and the Intelsat satellite. To complete the communications link, the carrier must make its own arrangements with a U.S. domestic carrier for connecting circuits between the earth station and the customer's premises and with a foreign telecommunications entity for the foreign satellite half circuit and any necessary connecting links within that country.

Congress contemplated that Comsat could be authorized to provide service directly to entities other than common carriers.[25] However, Comsat and the noncarriers are not free to contract as they wish. In "Authorized User I",[26] the

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24. 47 U.S.C., S. 721 (c) (2)
Under the Communication Act of 1934, as amended, the rendering of service by a carrier to a carrier has not been considered a common carrier function subject to regulation in the same way as service to the public. Such control has been exercised by the imposition of conditions in instruments of authorization. To assure that the Commission has ample direct legislative authority to deal with the matter, Congress made both general and specific provision. In S. 401 of the Satellite Act it made the services by one carrier to another a regulated service; in S. 201 (c) (2) it specified how this requirement was to be implemented in case of access to the satellite terminal station.

25. S. 102 (c) of the Satellite Act: It is the intent of Congress that all authorizes users shall have nondiscriminatory access to the system.
S. 305 (a) (2): Comsat may furnish, for hire, channels of communication to U.S. communications common carriers and to other authorized entities, foreign and domestic.
S. 305 (b) (4): Comsat is authorized to construct with authorized users, including the U.S. government, for the services of the communications satellite system.

26. Authorized entities and authorized users, Memorandum Opinion and Statement of Policy, Federal Register, 1966, [Docket No. 16058; FCC 66-677], p. 10144.
In reaching this conclusion, the Commission was primarily concerned with the possible harm that competition between Comsat and the other carriers providing international service would cause the existing carriers, particularly the IRCs, and the effect that a weakening of the carrier's might have on the rates and services they provided to the general

Commission concluded "that only in unique or exceptional circumstances should noncarrier entities deal directly with Comsat. Ascertainment of such circumstances was left to a case-by-case approach since the authorization to Comsat to provide services is dependent upon the nature of the service (i.e., unique or exceptional), rather than the identity of the user."

In the case of Government, Comsat would not be required to show that service was not available from other carriers or that there were unique and exceptional circumstances. The government's use of Comsat satellite services would be governed by the "national interest" as defined in the first instance by the Director of Telecommunications Management, as the official in the Executive Branch responsible for overseeing the government's use of telecommunications.[27]

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public.

The Commission reasoned that conventional carriers, with their high-cost cable facilities, would not be able to compete with Comsat in the provision of leased channel services, that the predictable loss of a "substantial share" of their leased-channel traffic would seriously reduce the IRC's operating revenues and that such losses would either weaken them to the point where they could no longer provide adequate service or would require that their rates for switched message services, such as telegram, telex, TWX and, perhaps, MTS, would have to be raised to make up for the leased-channel revenues lost as a result of competition. Since only a very small part of the using public using international communications facilities has sufficient traffic to justify or require leased circuit facilities, the Commission reasoned that allowing customers who take service directly from Comsat would mean that the new satellite technology would be used for the apparent benefit of a few large users to the detriment of the vast majority of users. In such circumstances it would be impossible for the Commission to carry out its responsibility under S. 201 (c) (5) to "insure that any economies made possible by a communications satellite system are appropriately reflected in rates for public communication service."

27. Federal Register, 1967, [Docket No. 16058; FCC 67-164], Authorized Entities and Authorized Users, Reconsideration, p. 2829-30.

Since the S.I.N. decision[28] the "unique and exceptional" policy in the Authorized User I is not applicable to international television service from Comsat. Permitting television users to have direct service from Comsat had little possibility of creating public detriments, the Commission was concerned about in the Authorized User I. This service accounts for less than one percent of the international carriers' revenues. The international carriers report only marginal profits or losses in providing the service. Even if all television revenues were diverted to Comsat, there would be no adverse effect on the other services provided by the international carriers.[29]

The Commission concluded that elimination of the carrier-of-the-week arrangement[30] would create competition among the international carriers and that this competition would likely provide many of the same public benefits as permitting Comsat to service television users directly. Furthermore, it is likely to create flexibility in the availability of entrance channels. Competition between the international carriers is likely to encourage the carriers to provide more

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28. 70 F.C.C. 2d, 1978, [CC Docket No. 78-218; FCC 78-719], Spanish International Network, p. 2127-48.

29. Ibid., at p. 2131.

30. Ibid., at p. 2129
Under the carrier-of-the-week arrangement the international carriers do not compete in the provision of international television services. Instead, they take turns in providing the service, alternating weekly.
"The domestic entrance channel facilities are owned by AT&T but they are shared by the joint television carriers. If AT&T is the carrier-of-the-week, the signal is connected at the AT&T operating center to facilities separately obtained by the customer which reach the customers network pick-up point. If one of the other carriers is the carrier-of-the-week, the signal is switched from AT&T's operating center over local loops to the other carrier's operating center and then over other local loops back to the AT&T operating center. At this point, it is interconnected to facilities obtained by the customer which reach the customer's network pick-up point.

efficient service and to pass on any efficiency savings in terms of lower rates. The competitive environment should stimulate the carriers to make available service options attractive to the television users.

In 1980 the Commission approved the application of the Comsat for authority to provide satellite television services directly to all users at U.S. earth stations and to all international television carriers individually.[31]

If the user chooses Comsat as its carrier, the user will arrange all domestic terrestrial links itself and place it service order directly with Comsat. Comsat would still provide earth station and space segment capacity as before. It will have an additional task, since it will place the user's order for foreign terrestrial facilities.

Comsat's role in Intelsat has changed from that of providing Intelsat comprehensive system planning, operation and management services to that of providing research and development and technical and planning support services on a contractual basis. As a result Comsat is seeking new opportunities for application of the corporate technology and expertise that it developed as the Intelsat system manager. Comsat's intention is to pursue such opportunities through diversification of its activities into non-Intelsat/Inmarsat lines of business.[32]

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31. 70 F.C.C. 2d, 1978, [CC Docket No. 78-218; FCC 78-719], Spanish International Network, p. 2127-48 and 76 F.C.C. 2d, 1980, File No. I-P-C-50; FCC 80-42; The Application of Comsat, p. 5.

32. The Maritime Satellite Act (47 U.S.C., S. 751 et seq.) designates Comsat as the U.S. Signatory and operating entity within Inmarsat. However, Comsat's scope of authority under the Maritime Satellite Act is limited to the provision of maritime satellite services and in the opinion of the Commission could not be extended to include exclusive provision of Inmarsat aeronautical services absent Congressional action.
Consequently, the FCC proposed that U.S. carriers would be

As a result of Comsat's increasing diversification into non-Intelsat/Inmarsat lines of business, the Comsat study was undertaken to determine whether any changes are required in Comsat's corporate structure and operating activities to fulfil effectively its obligations and carry out its functions under the Satellite Act of 1962 and 1934 Communication Act.[33]

The Commission concluded that Comsat's involvement in diversified satellite-related lines of business would likely contribute to the overall development of satellite communications technology and therefore be in the public interest. However, the Commission also found that Comsat's involvement in diversified business provides opportunities for anticompetitive behavior which require regulatory safeguards. Consequently, it proposed the restructuring of

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allowed to obtain space segment capacity through a consortium comprised of all U.S. carriers, including Comsat, wishing to provide aeronautical services via Inmarsat. The consortium would be designated as signatory to Inmarsat for aeronautical services. It would not provide the services. Carriers would provide service by accessing the Inmarsat space segment and then distributing aeronautical communications to their customers through their own earth stations and connecting facilities. The Commission recognized that the dual signatory approach would require changes in the Inmarsat Convention and Operating Agreement which provides that each administration selects only one signatory and operating entity. It would also require Congressional action to designate the consortium as signatory for aeronautical services. Vol. 52, Federal Register, 1987; [CC Docket No. 87-75; FCC 87-106], Provision of Aeronautical Services via the Inmarsat System, Notice of proposed Rulemaking, p. 13481.

However, the proposal was rejected and the Commission permitted Comsat to be the U.S. provider of Inmarsat aeronautical space segment capacity as ancillary to its role as U.S. signatory and operating entity for Inmarsat maritime services. This approach does not require changes of the Inmarsat Convention, Operating Agreement, and the Maritime Satellite Act. Vol. 54, Federal Register, 1989, [Common Carrier Docket No. 87-75, FCC 89-185], Provision of Aeronautical Services via the Inmarsat System, Final Rule, p. 33224.

33. Federal Register, 1980, [Docket No. 80-634; FCC 80-588], Changes in the Corporate Structure and Operations of the Comsat, Notice of Proposed Rulemaking, p. 71628-34, at p. 71630.

Comsat in order to separate its monopoly and competitive activities.[34]

The proposal to impose structural and related measures on Comsat was premised on two factors. First, Comsat is granted by statute monopoly control in the U.S. over international satellite transmission via the Intelsat and Inmarsat systems. Comsat therefore has monopoly ratepayers to whom it can pass on the costs of competitive services. The potential for misallocation of costs to the detriment of the ratepayers exists not only in the conduct of day-to-day operations associated with monopoly and competitive activities, but also in Comsat's use of its research and development capability in support of diversified business objectives. Second, Comsat is the recipient of information derived through its role in Intelsat and Inmarsat. This information relates to satellite communications technology development, market opportunities for products or services resulting from such development, and market capabilities of potential foreign and domestic competitors. Comsat can gain competitive advantages through the use of this information in support of its competitive ventures.[35]

In response to the Comsat study Comsat has made changes in its corporate structure. Under this reorganization it consists of the parent company and three wholly-owned subsidiaries which engage in non Intelsat/Inmarsat line of business.[36]

The parent organization was divided into two segments: the Headquarters Division and the World System Division (WSD). The Headquarters Division was

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34. Comsat Study, 77 FCC 2d 564 (1980).

35. Vol. 47, Federal Register, 1982, [CC Docket No. 80-634; FCC 82-372], Changes in the Corporate Structure and Operations of the Comsat, Policy Statement (Memorandum Opinion and Order), p. 41116-35., at p. 41122.

36. Ibid., at p. 41118-9.

established to provide certain administrative and support functions for the entire corporation as well as ultimate policy control over the various subsidiaries and divisions of the corporation. However, it was not to control the day-to-day operations of the corporation.

The WSD is organized into three operating units: (a) International Communications Services, which provides Intelsat and Inmarsat communications services to U.S. customers, and carries out related functions with respect to Comsat's participation in those organizations; (b) Intelsat Technical Services, which performs the technology application and system development services that Intelsat requests of Comsat; and (c) Comsat Laboratories, which is responsible for the research and development of new technologies for satellite communications, experimental earth station and spacecraft equipment, various engineering services, and special projects. The Labs will also provide these services to affiliates that engage in non Intelsat/Inmarsat businesses.

Comsat's three subsidiaries are: (a) Comsat General Corporation, which is involved in the provision of domestic and maritime satellite services, as well as in a worldwide technical services program. Comsat General has several subsidiaries; (b) Satellite Television Corporation, which provides a direct satellite-to-home subscription television service; and (c) Environmental and Technology Inc., which offers consulting services in the environmental area.

Therefore, under Comsat's current structure the parent has separate officers records and books of accounts and operating personnel from the subsidiaries. The parent and subsidiaries also provide their own facilities and their own financial personnel, procurement advertising and marketing services, except for sharing of certain corporate administrative support services and the

laboratories. The Commission permitted this limited sharing of resources but required Comsat to properly allocate common costs associated with such sharing. In addition, the FCC promulgated comprehensive guidelines requiring public disclosure of Intelsat statistical and technical information.[37]

By the year 1982 changing circumstances in international communication industry had cast doubt on the continued validity of the Authorized User I. The international market had experienced, and continued to experience, rapid development both in terms of the growth of traditional services and in the appearance of new services. Cables and satellites have become much more cost competitive than it was believed in 1966, and on some routes more economical than satellites.[38] Instead of being limited to international operations from a few U.S. domestic and foreign points of operation, the IRCs had an unlimited opportunity to provide international service from any point in the U.S. They also had authority to serve the U.S. market as well.[39]

In Authorized User II (1982)[39] the Commission decided to modify its 1966 policy in two respects. First, it allowed non-carrier entities to lease basic satellite

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37. Vol. 47, Federal Register, 1982, [CC Docket No. 80-634; FCC 82-372], Changes in the Corporate Structure and Operations of the Comsat, Policy Statement (Memorandum Opinion and Order), p. 41116-35. Vol. 48, Federal Register, 1983, [CC Docket No. 80-634; FCC 83-121], Changes in the Corporate Structure and Operations of the Comsat, Denial of Petitions for Reconsideration of Policy Statement, p. 23423-30. Vol. 49, Federal Register, 1984, [CC Docket No. 80-634; FCC 84-126], Changes in the Corporate Structure and Operations of the Comsat, Second Memorandum Opinion and Order, p. 19118-32.

38. 90 FCC 2d 1982, [CC Docket No. 80-170; FCC 82-357], Authorized User II, Report and Order, p. 1394, paragraph 49.

39. Ibid., paragraph 50.

39.A Ibid.

transmission capacity directly from Comsat's World System Division. In this role Comsat would provide service beginning or ending at the U.S. Intelsat earth station. Both carriers and non-carriers would be able to deal directly with Comsat under the same terms and conditions. Second, it determined that Comsat was eligible, through a separate common-carrier subsidiary, to seek certification under S.214 of the Communication Act to provide switched and other end-to-end services directly to customers.

The Commission found that the primary objectives of the Satellite Act - "the reflection of the benefits of satellite technology in both quality of services and charges for such services, and ... that the corporation created under this Act be so organized and operated as to maintain and strengthen competition in the provision of communications services to the public" - will be better attained through Comsat's direct offering of satellite service to the public. In addition, such a policy would advance the public-interest goals of the Communication Act.[40]

The Commission relies on three principal rationales to support its public interest finding under the Communication Act authorizing non-carriers to obtain service directly from Comsat. First, users may benefit from the elimination of these "middlemen". These users will save money and pass their cost savings on to other members of the public. This will, in turn, apply competitive pressures to existing carriers. Second, the industry would benefit from a new competitor such as Comsat. Third, replacing a regulatory requirement which has outlined its usefulness by marketplace forces will serve the public interest.[41]

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40. Ibid., paragraph 65.

41. Ibid., paragraphs 66-8.

The composite-rate policy was made discretionary and carriers were allowed to file either separate satellite and cable rates or to continue to file composite rates as they deem appropriate. Moreover, the Commission indicated its future intention to rely more upon competition to determine the relative use of the cable and satellite mediums and, accordingly, to grant the carriers greater discretion in making loading decisions.

The IRCs had argued that to maintain a competitive balance between Comsat and IRCs the Commission should not adopt the authorized User II policy unless it simultaneously granted them direct access to Intelsat and the right to build their own earth stations. The Commission was of the view that the Authorized User policy was separate from either of those other policies and that it could be implemented without action on direct access or earth station ownership. It also found that the carriers' direct access and earth station ownership proposals might be beneficial on their own merits and that they should be pursued independently. The IRCs thereafter filed for court review of the Authorized User II decision. On appeal the SIN decision was consolidated with the Authorized User II decision. The U.S. Court of Appeals for the District of Columbia Circuit adopted the IRC's nexus argument and directed the Commission to resolve the direct access and earth station ownership proceedings before implementing Authorized User II policy. In the same opinion vacating and remanding the Authorized User II, the court upheld the SIN policy.[42]

The then existing earth station ownership policy was established in 1966, at the time when Intelsat was barely operational, when satellite technology was

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42. ITT World Communications Inc., V FCC, 725 F 2d 732 (1984).

in its infancy and when the driving policy consideration was the establishment of a global satellite system. In this environment it was reasonable to give Comsat a dominant role in any earth station ownership scheme. However, the successful evolution of Intelsat from a fledging entity managed by Comsat with only a handful of members to a mature and financially sound organization with over 100 members and its own management staff creates the opportunity to advance from a necessarily conservative policy to a policy which stresses benefits to users while recognizing a commitment to Intelsat. Moreover, recent changes in satellite and earth station technology have helped open the way for greater individual carrier participation in earth station ownership and operation.[43]

Therefore, in 1984, the Commission adopted a more liberal policy on the ownership and operation of U.S. international earth stations that operate with the Intelsat. Under the new policy earth stations could be owned by ESOC, by individual carriers, by Comsat or by any combination of carriers with or without Comsat's participation.[44] Such a policy would, in the opinion of the Commission, promote innovation, encourage system efficiency, establish more service choices for users, and create a downward pressure on costs and rates to the public.

ESOC ownership shares were to be reallocated in proportion to the joint owners' current usage of the ESOC facilities. The ESOC joint owners were permitted to negotiate among themselves the future of ESOC.

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43. Vol. 49, Federal Register, 1984, [CC Docket No. 82-540; FCC 84-122], Modification of Policy on Ownership and Operation of U.S. Earth Stations that Operate with the Intelsat, Proposed Rule, p. 19053-70, at p. 19056.

44. Vol. 49, Federal Register, 1984, [CC Docket No. 82-540; FCC 84-605], Modification of Policy on Ownership and Operation of U.S. Earth Stations that Operate with the Intelsat, Report and Order, Policy Statement, p. 50030-45.

Comsat was required to separate its competitive common carrier earth station activities from its monopoly common carrier space segment activities; to apply for new stations or for modifications to authorized stations through a Comsat subsidiary; and to transfer any ownership interests in existing Intelsat stations from the WSD to a separate subsidiary and to submit such proposed transfer to the Commission for review.

Applications to provide IBS[45] and television[46] services will be processed in a routine fashion. A more rigorous review, on a case-by-case basis, will be employed in case of applications for multi-purpose stations.

The Commission held that it has the authority under title III of the Communication Act to license private, non-common carrier, transmit / receive earth stations for use with INTELNET and IBS services, notwithstanding S.201

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45. Intelsat has planned the space segment capacity for IBS, unlike its standard capacity, to enable a single transborder to accommodate access by a larger number of earth stations including those with small and medium size antennas.

"Intelsat has indicated that three IBS network are possible. The selection of one or more of these will be a matter for each user country. The concepts are: (1) user gateway network - where an international business user would locate a small standard E or F earth station on or near its premises, minimizing the need to use and the cost of switched network terrestrial connecting facilities; (2) urban gateway network - where a community of users in one area shares a small standard E or F earth station; (3) country gateway network - where the users in a country access the service through large standard A, B or C earth stations."

The characteristics of the space segment that Intelsat plans to have available for IBS purposes are such that they do not give rise to the same concern that Comsat has with respect to independent ownership of multi-purpose stations.

46. Television service, like IBS, is a specialized offering distinct from Intelsat's general offering of space segment capacity. This service is a relatively minor source of revenues for Intelsat. It is provided by a small number of specific satellite transponders which can be accessed by only a limited number (ordinarily) two of earth stations per transponder. The issues of inefficiency or revenue diversion are not particularly critical for consideration of television service earth station applications.

(c) (7) of the Communication Satellite Act of 1962, which provides that the Commission shall license satellite terminal stations used with the Intelsat satellite system either to Comsat or to one or more authorized common carriers.[47] S.201 (c) (7) and its legislative history shows that the witnesses and Congressional committee members consigning the Satellite Act believed, based on the state of satellite technology in 1962 and that expected to be available for the foreseeable future, that the global satellite system would be limited to the provision of traditional common carrier services.[48]

The language of S.201 (c) (7) does not confer any special licensing authority upon the Commission. Rather, the Commission's authority to license "satellite terminal stations", just as with all other radio stations, falls under title III of the Communication Act. Title III does not distinguish between Comsat, the carriers, and private entities as qualified earth station licensees. S.201 (c) (7) does not limit the Commission's discretion under Title III to grant private international earth station authorizations to "any applicant", if the public interest will be served thereby. The purpose of S.201 (c) (7) was to make clear that the FCC has complete discretion to license "satellite terminal stations" without Congressional prejudgment.[49]

The FCC has recently established a registration program in lieu of licensing for earth stations used to receive INTELNET I services from Intelsat

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47. 3 F.C.C. Rcd, No. 6, 1988, [File No. I-S-P-86-006; FCC 88-92], Licensing under title III of the Communication Act of 1934, as amended, of Private Transmit/Receive Earth Stations Operating with the INTELSAT, p. 1585.

48. Ibid., at p. 1587.

49. Ibid.

space stations.[50]

Moreover, construction permits are no longer required for transmit-receive earth stations that operate with Intelsat and Inmarsat space stations, or for earth stations that operate with international space stations separate from Intelsat. Construction of such stations may commence, prior to the grant of a license at the applicant's own risk.[51]

Carriers other than Comsat were not permitted to obtain so-called direct access to Intelsat in the form of capitalized leaseholds or investment interests in Comsat's share of Intelsat space segment facilities.[52] Direct access would not reduce any of the fixed costs of the Intelsat satellite system, but would merely divide the U.S. share of those costs (now borne by Comsat) among several entities, nor would it produce any significant economic savings to carriers or users.

The Authorized User II policy as modified by Earth station ownership decision was reaffirmed.[53] Therefore, Comsat was allowed to offer space segment directly to users, including enhanced-service providers, at U.S. earth stations through its World System Division, and to provide end-to-end services through

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50. Vol. 56, Federal Register, 1991, [CC Docket No. 86-496; FCC 91-136], Satellite Communication Services, Final Rule, p. 24014, at p. 24020, S.25.131 (j).

51. Ibid., at p. 24016, S.25.113 (b).

52. 49, Federal Register, 1984, [CC Docket No. 82-548; FCC 84-129], Regulatory Policies Concerning Direct Access to Intelsat Space Segment for the U.S. International Service Carriers, Termination of Inquiry, Report and order, p. 19132-43.

53. Vol. 50, Federal Register, 1985, [CC Docket No. 80-170; FCC 84-633], Modification of the Commission's Authorized User Policy Concerning Access to the International Satellite Services of the Comsat, Second Report and Order (Policy Statement), p. 2552-64.

a separate common carrier subsidiary. The separate subsidiary requirement was retained for all end-to-end services, including television service.

There was no objection to Comsat's providing both earth station and end-to-end services through the same subsidiary. However, in such a case Comsat would be required to maintain separate accounts for each line of business.

A Comsat subsidiary would be required to acquire satellite services under the same tariff and at the same rates applicable to the carriers. The carriers would, thus, be on the same footing as a Comsat subsidiary in competing for the business of the end-user.

(ii) Transborder Policy

Following the issuance of official guidance by the Department of State, the FCC determined that the public convenience and necessity require the use of domestic satellite facilities for the provision of certain international public telecommunications services.[54]

In a letter from the Secretary of State James Buckley to the chairman of the Commission, the Department of State announced the Executive Branch's position regarding U.S. reliance on domestic satellites for public international telecommunications with nearby countries. It is the position of the Department of State that:

"Certain exceptional circumstances may exist where it would be in the interest of the U.S. to use domestic satellites for public international telecommunications with nearby countries. One such case would be where the global system could not provide the service required. Another case would be where the service

54. Supra, footnote 7.

planned would be clearly uneconomical or impractical using the Intelsat system in such cases, the U.S. commitment to the global system would not preclude reliance on domestic satellite facilities. The burden of proof for demonstrating that sound technical, operational or economic reasons warrant reliance on domestic satellites for international purposes must rest with proponents of such use."[55]

Moreover, the State Department letter set forth the procedure that would follow a conclusion by the Commission that reliance on the domestic space segment for certain proposed international purposes is required by the public convenience and necessity. Prior to the implementation of transborder programming services or the reception of transborder signals at U.S. domestic receive-only earth stations, the State Department will consult appropriate foreign governmental authorities, and given their concurrence, will submit a proposal to Intelsat in accordance with Article XIV (d). Service may not be inaugurated until: (a) the proposal not to utilize the Intelsat space segment receives a favorable recommendation; or (b) such proposal is supported by the U.S. government and both the U.S. and the foreign governmental authorities concerned, in the absence of a favorable recommendation by the Assembly, consider in good faith that the obligations under Article XIV (d) have been met.[56]

In adjudicating the merits of the applications before it, the Commission considered whether the 1962 Satellite Act, the Intelsat Agreement and U.S. telecommunications policies permit it to authorize the use of domestic facilities

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55. Ibid., paragraph 30.

56. Ibid., paragraph 58.

for the provision of certain international public telecommunications services.

No national or foreign policy interest bars the Commission's consideration of the applications.[57]

The same is true of the Satellite Act and its legislative history. The Act contemplates the eventual creation of alternative satellite systems, both domestic and international, where necessary to meet U.S. needs and to respond to the rapidly changing satellite technology.[58]

The use of non-Intelsat space segment for transborder programming services is consistent with the Intelsat Agreement under certain conditions.[59]

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57. Ibid., paragraph 31.

58. S.102 (d) of the Satellite Act provides: "It is not the intent of Congress by this Act to preclude the use of the communications satellite system for domestic communications services where consistent with the provision of the Act nor to preclude the creation of additional communications satellite systems, if required to meet unique governmental needs or is otherwise required in the national interest."

    The language "or is otherwise required in the national interest" was urged to be added to S.102 (d) by Senator Frank Church. He stated: "The wisdom of this last clause" or is otherwise required in the national interest "is perfectly apparent. We cannot now foretell how well the corporate instrumentality established by this act [Comsat] will serve the needs of our people. If it should develop that the rates charged are too high, or the service is too limited, so that the system is falling to extend to the American people the maximum benefits of the new technology, or if the Government's use of the system for voice of America broadcasts to certain parts of the world proves excessively expensive for our taxpayers, then certainly this enabling legislation should not preclude the establishment of alternative systems, whether under private or public management." (See supra, footnote 7, paragraph 33).

59. Article XIV (d) of the Intelsat Agreement.

    The Intelsat Agreement reflects a carefully balanced compromise between the Intelsat members supporting a single global system designed to provide all international public telecommunications services, with a corollary prohibition of other international systems (the position strongly argued by the U.S.), and those countries which desired the latitude at some future time to construct and operate other international satellite systems. The result is that the parties to the Intelsat Agreement are committed to "the aim of achieving a single, global, commercial

In Domsat II the Commission announced, as a policy objective, that it would "retain leeway and flexibility in its policymaking with respect to the use of satellite technology for domestic communications so as to make such adjustments therein as future experience and circumstances dictated."[60] The applications for transborder services presented the Commission with the opportunity to extend the usefulness of U.S. domestic satellites. The Commission stated that certain specialized services can be made available to nearby countries that lie within the footprint of U.S. domestic satellite facilities.[61]

Deregulation of domestic receive-only earth stations eliminated their mandatory licensing. However, other regulatory requirements remained. Permission to receive service from non-U.S. points, or for Domsat carriers to provide service to non-U.S. points, can be provided only after the discharge of treaty obligations to Intelsat. Therefore, until such permission is granted, any reception of non-U.S. signals is unauthorized and subject to the sanctions of S.605.

The authorization of each applicant's proposal is conditioned upon the completion of Intelsat Article XIV (d) coordination process, and the concurrence of the country in which the radio signals originate or terminate.[62]

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telecommunications satellite system." However, the existence of international satellite systems separate from the Intelsat system is permitted provided technical compatibility and economic harm conditions of Article XIV (d) are satisfied.

60. 35 FCC 2d, [Docket No. 16495; FCC 72-531], Establishment of Domestic Communications - Satellite Facilities by Non-Governmental Entities, Second Report and Order, (Domsat II), p. 844.

61. Supra, footnote 7, paragraph 42.

62. Ibid., paragraph 45.

Since the Transborder decision in 1981, the FCC has approved on a conditional or final basis, over two hundred similar applications.[63]

In Communications Satellite Corporation V FCC[64] the Court upheld the more expansive interpretation of the FCC that the transborder policy applied where the proposed service was incidental to an existing domestic satellite, and did not require that service be incidental to an already existing domestic service. Also, the court found that the transborder exception could apply to a situation when there is a proposed service for two-way communications with a state not contiguous with the U.S.

(iii) Separate System Policy

Since 1983, several applications have been filed for authority to establish

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63. Derrick, C.W., Competition versus Cooperation: The D.C. Circuit Referees the Transborder Policy, Vol. 14, N.C.J. Int. L. and Com. Reg., 1989, p. 315, at p. 322.

64. Communications Satellite Corporation V FCC, 836 F.2d 623/D.C.Cir. 1988).

However, the court was troubled by the FCC's willingness to base a finding of "uneconomical" solely on the fact that Intelsat would charge a higher price for the service than would a domestic competitor. Higher prices for international services are to some degree inherent in Intelsat's system of globally averaged rates, mandated under article V (d) of the Intelsat Agreement. The comparative-price approach appears to mark a significant departure from prior FCC practice. In earlier transborder cases, the Commission's findings of "uneconomical" had been based on determinations that use of the Intelsat system would require multiple satellite hops, additional terrestrial links, or duplication of facilities. In other words, the difference between the proposed service and possible Intelsat service always has involved a qualitative component (at 633). Consequently, the court ordered that on remained the FCC should address the issue of whether a finding that Intelsat service is uneconomical can be based on a price comparation alone.

communications satellites that would provide international service.[65] From the point of view of the types of information that can be carried over a given satellite network, the services now offered or planned by Intelsat are generally comparable to those proposed by the separate system applicants. It is in the area of packaging and transmitting the information from one place to another that the propo.ed separate satellite networks would differ markedly from Intelsat.[66]

First, the proposed separate systems would be able to provide downlink powers greater than can be provided by Intelsat. This capability will permit the separate systems to create combinations of service enhancements depending on specific customers' needs that include the use of smaller earth stations and/or higher information transmission rates than are possible with Intelsat satellites.

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65. - The Orion Satellite Corporation, File No. CSS-83-002-P, March 11, 1983;
- International Satellite, inc., File No. CSS-83-004-P (LA), 1-P-C-83-073, August 12, 1983;
- RCA American Communications, inc., File No. I-T-C-84-085, February 13, 1984;
- Cygnus Satellite Corporation, File No. CSS-84-002-P (LA), March 7, 1984;
- Pan American Satellite Corporation, File No. CSS-84-004-P (LA), May 31, 1984;
- Systematics General Corporation filed two applications to construct, launch, and operate satellite systems providing international services. File Nos. CSS-84-005-P (LA), CSS-84-006-P (LA), June 12, 1984. Systematics filed a motion to withdraw both applications on July 27, 1984.
- Western Union Telegraph Co. requested, and was granted a waiver to spend additional money to modify its previously authorized Westar VI-S domestic satellite (File No. 1144-DSS-P (LA)-84) to allow 6 transponders to provide coverage of Central and South America.

66. Vol. 50, Federal Register, 1985, [CC Docket No. 84-1299; FCC 84-632], Establishment of Satellite Systems providing international communications, Notice of Inquiry and Proposed Rulemaking, p. 1571-82., at p. 42278.

As a general matter, Intelsat cannot match the proposed separate systems in achieving combinations of earth station size, transmission rates, connectivity, user control, security and costs that may be desired by a user with special needs.[67] Intelsat can make tradeoffs in available bandwidth, information transmission rates and other service parameters to offer a comparable combination of factors to that user. But such tradeoffs would result in system inefficiencies not present in separate systems that are specifically designed to provide various combinations

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67. "Intelsat has designed its satellite networks and service offerings to provide international switched services on a global basis. In general, Intelsat procures and operates space segment facilities which feature high-capacity, low-power satellites, and which must be operated with large, high-grain antennas at expensive earth stations. These earth stations serve as national gateways to a country's public-switched terrestrial networks. Because this system design is intended to provide the widest possible global connectivity, it is well suited to the provision of international telephone and other switched services. However, generally, it is not as cost effective or efficient for many other types of services, particularly point-to-multipoint and multipoint-to-point services which require a number of earth stations, as are the proposed satellite systems. These services are most efficiently provided by use of small earth stations located at or near a customer's premises, operating with high power satellites and/or satellites in the 11-12/14 GH_z band.

To provide small earth station services, Intelsat has both modified space segment facilities and specifically planned new space segment facilities that will provide higher power beams in the 11-12/14 GH_z bands. It has also introduced IBS. IBS is a totally digital integrated transmission service over which a wide range of information services can be provided to customers at earth stations located at or wear their premises. In addition, Intelsat has introduced a service, Intelnet, designed to provide point-to-multipoint data service to earth stations with very small antennas. Intelnet uses spread-spectrum modulation techniques to allow for such small earth stations. Intelsat also has introduced a variety of new international video services which it states are tailored to meet specific user requirements and involve, in some instances, distribution of signals to small earth stations serving cable television systems. These new video services are offered to the operators of small earth station through the use of unused transponder capacity. Use of small earth station is made possible by devoting more transponder bandwidth and corresponding power, to the TV carrier than is ordinarily the case."

of service enhancements.[68]

Second, with respect to the coverage area and connectivity of satellites providing customer-premises services, some of the networks the applicants have proposed will provide full or nearly full coverage of the contiguous U.S. (CONUS) in single 11-12/14 GH_z beams. Intelsat does not have such capability. Its current service only covers approximately one-third of CONUS. Intelsat's planned 11-12/14 GH_z services would only provide full CONUS coverage with the use of two satellites.[69]

Third, Intelsat states that it is permitted to both sell and lease space segment capacity. However, it does not now offer to sell transponders. Intelsat does currently offer a variety of long-term leases for IBS, Intelnet, domestic and video services. In comparison, each separate system applicant intends the sale of space segment capacity to be a primary aspect of its operation. Their proposals provide a means of attaining for international users the same benefits that are available from the sale of domestic transponders.[70]

Following the filing, by Orion, of the first application for authority to establish communications satellites for international services[71], the Department of State and the Department of Commerce sent a joint letter to the Commission requesting that the Commission refrain from taking any final action on the application until such time as an executive branch group could review and study the application's impact on the national interest and foreign policy of the U.S.

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68. Ibid., at p. 42278-9.

69. Ibid., at p. 42279.

70. Ibid., at p. 42279.

71. The Orion Satellite Corporation, File No. CSS-83-002-P, March 11, 1983.

After filing of the second application by ISI[72], The Department of Commerce sent a letter to the Commission which again requested that the Commission does not take any final action on the applications. The letter stated that the filing of a second application for international satellite services raised new considerations which would have to be included in the executive branch analysis.[73]

On November 28, 1984, President Reagan signed a presidential determination[74] that alternative satellites systems were required in the national interest within the meaning of S.102 (d) and 201 (a) of the Communication Satellite Act.

At the direction of the President, the Department of State and Department of Commerce jointly informed the Commission, by letter[75], of the president's decision and the criteria necessary to ensure that the U.S. meets its international obligations and to further U.S. telecommunications and foreign policy interests. The letter proposed that two restrictions be imposed on the alternative systems prior to final authorization by the Commission: (1) each system is to be restricted to providing services through the sale of long-term lease of transponders or space segment capacity for communications not interconnected with public-switched message networks[76] (except for emergency

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72. International Satellite, inc., File No. CSS-83-004-P (LA), I-P-C-83-073, August 12, 1983.

73. Supra, footnote 66, at p. 1571.

74. Ibid., at p. 1579.

75. Ibid., at p. 1579-80.

76. The Commission regards the term "public-switched message networks" for purposes of implementing the executive branch restriction to include those facilities established to provide switched message services such as MTS, Telex, TWX, telegraph, teletext, facsimile and high speed switched data

restoration services); and (2) one or more foreign authorities are to authorize use of each system and enter into consultation procedures with the U.S. party under Article XIV (d) of the Intelsat Agreement to ensure technical compatibility and to avoid significant economic harm.

Having found that the Communication Satellite Act of 1962 and the Intelsat Agreement recognized the establishment of international satellite systems, separate from the Intelsat global system, the Commission concluded that the authorization of these separate systems would be in the public interest, and are attainable without causing significant economic harm to Intelsat.

The establishment of separate satellite systems will result in substantial benefits to users of international satellite communications services. In general, users gain greater control over such factors as design, availability, use and costs when they are permitted to own space segment capacity. Control over these variables will permit customers to meet special needs that they now are unable to satisfy. This operational flexibility would assure the user of the availability of transmission capacity for the period of time desired at an established price. Long-term business plans could be made accordingly. The user could not be similarly assured that transmission capacity will be so available from current common carrier offerings since carriers must offer capacity indiscriminately as it is available and may change the price and other terms and conditions of their offer through tariff filings.[77] In addition, separate systems will stimulate

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services. Vol. 50, Federal Register, 1985, [CC Docket No. 84-1299; FCC 84-632], Establishment of Satellite Systems Providing International Communications, Notice of Inquiry and Proposed Rulemaking, p. 1571-82, at p. 42287.

77. Ibid., at p. 42280.

technological innovation and service development, improve network efficiencies, reduce user-costs, create new business and trade opportunities.

The Commission disagreed with the position of the Intelsat management that the applicants and the Commission have a burden of proving that Intelsat does not or cannot offer features and capabilities provided by the proposed systems.[78]

Intelsat will remain the exclusive provider of satellite facilities for public-switched message services.

Peripheral or "customized" services would be subject to competition between Intelsat and separate satellite systems. Intelsat may loose a small part of its business in this market to new entrants, but growing demand for satellite services will more than compensate for a smaller market share.

As to the scope of the Executive Branch restrictions the Commission found that: (1) no communications provided over the separate systems may interconnect with the public switched network either directly or indirectly; (2) there will be no minimum unit of capacity; (3) there will be a one-year minimum lease period; (4) separate system operators are not to operate as common carriers; (5) the "no-interconnect" restriction and one-year long-term lease requirement will apply to all levels of users of separate system facilities; (6) common carriers and enhanced service providers may resell separate satellite capacity consistent with the restriction; and (7) the use of separate systems by U.S. carriers would require authorization under S.214 of the Communication Act.

On reconsideration, the Commission granted modifications on the

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78. Ibid., at p. 42281.

following issues. First, separate systems operators and their resellers may provide occasional use television or any other services not interconnected with the public switched network under a one-year minimum requirements contract. Second, while insisting that separate system operators' primary purpose remain the provision of international communications, the Commission states that it will allow separate system customers to use their facilities for domestic communications which are reasonably related to use of the facilities for international telecommunications.[79]

Soon after the separate systems policy was adopted, Congress undertook to write it into law as part of the 1986-87 Foreign Relations Authorization Act.[80] This enactment specifies that it was U.S. policy to promote separate systems as long as they are technically compatible with Intelsat and avoid "significant economic harm" to its system[81], and as long as they complied with the Executive Branch conditions established pursuant to the Presidential Determination.[82] In its definitional section, the legislation defined "separate system" so as to exclude the kind of proposals the Commission had considered under its transborder policy.

The U.S. proposal to allow separate systems caused negative international

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79. Vol. 51, Federal Register, 1986, [CC Docket 84-1299; FCC 86-144], Common Carrier: Reconsideration of Establishment of Separate Satellite Systems for International Communications, Memorandum Opinion and Order on Reconsideration, p. 17631.

80. Pub. L. No. 99-93, S.146, 99 Stat. 405, 425-26 (1985).

81. Id., S.146 (a).

82. Id., S.146 (B) (1).

reaction.[83] The Intelsat governing bodies passed resolutions expressing their concern that competition from private satellite systems would threaten the cooperative's viability. Furthermore, in April 1984, during a meeting attended by 73 signatories, a unanimous resolution was passed calling on members to refuse to enter into operating agreements with private competitors.[84]

Despite the hostile reaction Pan American Satellite, having completed Intelsat coordination, received final FCC authorization and launched an international satellite system. When first launched in 1988, Pan American Satellite had only one communications link and that was with Peru. Now Pan American Satellite's PAS-1 satellite has been coordinated and authorized to operate to twenty-four countries.[85]

It has been asserted that domestic restrictions preventing separate satellite systems from carrying international public switched network (PSN) traffic are in distinct contradiction to the U.S. advocacy of competition and liberalization abroad.[86] The restrictions originally were intended to protect Intelsat from economic harm, but experience has demonstrated that Intelsat benefits more from competition than it does from artificial protectionism. Intelsat has grown stronger and more responsive to its customers, and it has experienced significant increases in traffic. Additionally, communications competition has led to

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83. Firestone, C.M., (ed.), International Satellite and Cable Television, The Fourth Biennal Communication law Symposium, 1985, at p. 191-5.

84. Supra, footnote 9, at p. 518.

85. Telecom Highlights International, March 27, 1991, p. 14.

86. Satellite News, May 27, 1991, p. 6-7.

decreases in prices paid by consumers.[87]

Stating that there is no economic justification for protecting any Intelsat monopoly, Pan Am Sat argues that protection for public switched network services be removed from the restrictions on separate system operators for the following reasons: first, services that interconnect with the PSN will become increasingly difficult to define, let alone segregate from competitive service offerings; second, the availability of routing options for large corporate users has the potential to exacerbate the equity problem for "normal" telephone users, those that do not maintain their own private networks; third, the PSN restriction at most protects Intelsat against just one form of competition, that from separate systems.[88]

The lifting of the PSN restriction world neither threaten Intelsat's existence nor its viability. However, repealing the restriction would mean a radical change in Intelsat's status and in the character of international communications. It would mark the beginning of the end of Intelsat's privileged status as an international monopoly, and it would pave the way for a competitive and pluralistic international market structure.[89]

The FCC must defer action on the Pan Am Sat petition until completion of the executive branch review of the separate satellite restrictions.[90]

Intelsat's Board of Governors has recently approved the first request to use a U.S. separate satellite system for services interconnected to public switched

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87. Satellite News, December 10, 1990, p. 10.

88. Satellite News, January 22, 1990, p. 3.

89. Supra, footnote 86, at p. 7.

90. Telecommunications Reports, March 4, 1991, p. 41.

networks - a Pan Am Sat proposal to provide limited interconnected services to Caribbean and Eastern European countries.[91]

2. Policy on Domestic Satellite Systems

In respect of domestic satellite services the FCC adopted a flexible regulatory policy in order to stimulate satellite technology and allow applicants, not the Commission, to shape the direction of the domsat operations. Domsat licensees were expected, therefore, to demonstrate the merits of their systems in actual commercial practice.[92]

While the initial generation of domestic satellites provided services on a common carrier basis, the transponder sales decision made available to customers arrangements tailored to meet their particular needs.[93]

A customer has several options with respect to obtaining transponder capacity. He may lease capacity from a carrier, buy capacity in bulk for resale, lease or purchase entire transponders or parts thereof on a long term basis, obtain a percentage ownership interest, or choose to buy capacity from a reseller. In addition to the benefits of transponder ownership, a customer has a choice of customer premise, shared use or common use general purpose earth stations and

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91. Telecommunications Reports, March 18, 1991, p. 26.

92. Vol. 35, Federal Register, 1970, [Docket No. 16495; FCC 70-306], Establishment of Domestic Communication-Satellite Facilities by Nongovernmental Entities, Report and Order, (Domsat I), p. 5356 and 35 FCC 2d, [Docket No. 16495; FCC 72-531], Establishment of Domestic Communications - Satellite Facilities by Non-Governmental Entities, Second Report and Order, (Domsat II), p. 844.

93. Vol. 47, Federal Register, 1982, [CC Docket No. 82-45, FCC 82-351], Domestic Fixed - Satellite Transponder Sales, Policy Statement and Order, p. 40413.

a variety of transmit-receive equipment.

There is no statute expressly dealing with domestic satellite systems. The FCC's authority comes solely from the title III of the Communication Act. The Commission's jurisdiction under the 1934 Act to license and regulate domestic satellite facilities is not affected by the circumstance that the radio transmission involves stations located in space and a new technology not explicitly mentioned in that Act.

The 1934 Act, which directs the Commission to provide "a rapid, efficient, nationwide and worldwide wire and radio communication service"[94], applies to "all interstate and foreign communication by wire or radio and all interstate and foreign transmission of energy by radio, which originates and or is received within the U.S." and to "the licensing and regulating of all radio stations."[95] A license from the Commission is required for all radio stations except government-owned stations.[96] By definition, "radio station" is "a station equipped to engage in radio communication or radio transmission of energy"[97]. "Communication by radio" is defined to include "all instrumentalities, facilities, apparatus, and services" incidental to "the transmission by radio of writing, signs, signals, pictures, and sounds of all kinds"[98], and "transmission of energy by radio" similarly includes both such transmission and "all instrumentalities, facilities, and

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94. 47 U.S.C. S.151.

95. Ibid., S.152 (a).

96. Ibid., S.301, 303, 305, 307, 308 and 309.

97. Ibid., S.153 (k).

98. Ibd., S.153 (b).

services incidental to such transmission"[99]. These all-inclusive definitions clearly include non-government satellite and earth station facilities used for interstate communication or transmission of energy by radio, which originates and is received within the U.S.[100].

In order to explore various legal, technical and policy questions associated with possible authorization of domestic communications satellite facilities to nongovernmental entities, a proceeding has instituted by the Commission in 1966.[101] A few years later it adopted a report, where it concluded that the Communication Act and Communication Satellite Act empowers it to authorize any non-governmental entity, including Comsat, other common carriers, and non-carriers, to construct and operate (either individually or jointly) communications satellite facilities for domestic use.[102]

Instead of attempting to prescribe arrangements for an initial program, the Commission permitted potential applicants to take the initiative in submitting concrete system proposals from the Commission's consideration. Applicants may propose the rendition of such services directly to the public on a common carrier basis or by the lease of facilities to other common carriers, or any combination of such arrangements. Applicants may also propose private ownership and use or the joint cooperative use of the system by the several owners thereof.

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99. Ibid., S.153 (d).

100. Vol. 35, Federal Register, 1970, [Docket No. 16495; FCC 70-306], Establishment of Domestic Communication - Satellite Facilities by Nongovernmental Entities, Report and Order (Domsat I), p. 5356, at p. 5363.

101. Notice of inquiry, 31 Fed. Reg. 3507; Supplemental notice of inquiry, 31 Fed. Reg. 13763.

102. Supra, footnote 100, at p. 5376.

Applicants may further propose the shared use of same facilities by different systems, or a division in the ownership in various system.[103]

In formulating the policies to govern the licensing and regulation of the construction and use of satellite systems for domestic communications purposes, the Commission will be guided by the following objectives:

> "(a) to maximize the opportunities for the early acquisition of technical, operational, and marketing data and experience in the use of this technology as a new communications resource for all types of services;
> (b) to afford a reasonable opportunity for multiple entities to demonstrate how any operational and economic characteristics peculiar to the satellite technology can be used to provide existing and new specialized services more economically and efficiently than can be done by terrestrial facilities;
> (c) to facilitate the efficient development of this new resource by removing or neutralizing existing institutional restraints or inhibitions; and
> (d) to retain leeway and flexibility in our policy making with respect to the use of satellite technology for domestic communications so as to make such adjustments therein as future experience and circumstances may dictate."[104]

Multiple entry will best promote the policy objectives. However, multiple entry does not mean unlimited or unrestricted open entry. All applicants will be required to show their financial, technical and other qualifications and to make the requisite finding that a grant of the particular proposal will serve the public interest, convenience and necessity.[105]

In order to provide incentives for new satellite entrepreneurs to compete in the specialized satellite service markets, the FCC adopted certain regulations.

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103. Ibid., at p. 5359.

104. Supra, footnote 60, at p. 846-7.

105. Ibid., at p. 850-1.

Several domestic satellite applicants were required to form separate corporate subsidiaries.[106]

Furthermore, the incentive for competitive entry by satellite system entrepreneurs required taking appropriate measures toward the end that a reasonable opportunity for effective entry is not defeated or weakened by AT&T (the predominant terrestrial supplier of specialized services), either directly or through its existing or future relationships with Comsat.[107]

The joint Comsat/AT&T proposal, according to which the entire capacity would be leased to AT&T, was found contrary to the public interest and to the overall multiple-entry policy. Since AT&T would be a principal source of the domestic service revenue that Comsat would seek to obtain, it was not realistic to expect Comsat to compete vigorously in the provision of specialized services on an end-to-end or "retail" basis and thereby challenge AT&T's terrestrial domination in this field. Moreover, such a course would deprive others of the benefit of Comsat's expertise in the communications satellite field. If Comsat should proceed in the dual capacities, serving AT&T under the leased agreement

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106. The separate subsidiary requirement was imposed on Comsat so as to ensure that its role in Intelsat would not be adversely affected by its non-Intelsat activities, (35 FCC 2d at 853); GTE Service Corporation in light of the circumstance that it was proposing to provide interstate MTT service for the first time (35 FCC 2d at 853), satellite equipment suppliers in order to separate their communications activities from their manufacturing operations (35 FCC 2d at 855); RCA to separate competitive domestic market activities from the international record operation of RCAG. 56, FCC 2d, (FCC 75-1246), In the matter of RCA Global Communications, inc., RCA Alaska Communications, inc., p. 660. A separate subsidiary requirement was not imposed on AT&T and Western Union because they were proposing to use domestic satellites primarily as an alternative transmission means for services that they were already providing terrestrially.

107. Supra, footnote 60, at p. 847.

and pursing implementation of the multipurpose system, the revenues that would be guaranteed to Comsat from the AT&T contractual arrangement would give it an extraordinary advantage and head start over all other potential domestic satellite entrants seeking to develop specialized services in competition with Comsat as well as with AT&T's terrestrial services. Finally, consideration of the conditions under which AT&T and Comsat were to be permitted to enter the domestic satellite field was affected by AT&T's ownership of 29 percent of Comsat's stock and its ability to elect three of the 15 Comsat directors.[108]

AT&T's initial use of domestic satellites was limited to MTT, WATS, AUTOVON and emergency restoration in the event of terrestrial outage.[109] On reconsideration, AT&T was allowed to provide all U.S. government private line services.[110] This restriction was to be reevaluated by the Commission when the specialized carriers achieved a substantial utilization of their satellite capacity or three years after the commencement of domestic satellite operations by AT&T.[111]

For those services it was authorized to provide, AT&T would have the option of applying for authority to own and operate satellite facilities or of leasing transponders under tariff from Comsat or any other carrier who elects to proceed solely as a carrier's carrier.

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108. Ibid., at p. 848-9.

109. Ibid., at p. 851.

110. Vol. 38, Federal Register, 1973, [Docket No. 16495; FCC 72-1198], Establishment of Domestic Communications - Satellite Facilities by Non-governmental Entities, Memorandum Opinion and Order, (Domsat III), p. 1180, at p. 1184.

111. Supra, footnote 60, at p. 852.

In 1975 GTE Satellite Corporation and AT&T were authorized to jointly operate the COMSTAR system.[112] In accepting the authorization, GSAT agreed to be bound by the conditions imposed upon AT&T's use of its satellite systems.

The moratorium on the provision of nongovernment private line services expired in 1979.[113]

A year later, AT&T was authorized to replace Comstar Satellites.[114]

Comsat was also given two options in case it elected to serve AT&T, it would be required to operate solely as a carrier's carrier. If, on the other hand, Comsat elected to serve entities other than AT&T, than it could offer end-to-end service, lease transponders to carriers, and offer other services as proposed in its application for a multi-purpose system.[115]

In addition, Comsat was required to form a separate corporate subsidiary to engage in domestic satellite venture regardless of which option it chose to implement.[116]

The Comsat/MCIL proposal to create CML Satellite Corporation replaced Comsat's original application for a multipurpose system. It would coalesce in one applicant the retail marketing known-how of MCI Communications, derived from its existing and proposed operations as a terrestrial specialized carrier; the technical talents of lockheed Aircraft as a major manufacturer of space

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112. 57, F.C.C. 2d, [Docket No. 20201; FCC 75-1335], in the matter of applications of GTE Satellite Corporation, p. 147.

113. 72 F.C.C. 2d, (FCC 79-443), Satellite Private Line Services, p. 895.

114. 84, F.C.C. 2d (FCC 80-714), Comsat General Corporation, A.T. and T., p. 547.

115. Supra, footnote 111.

116. Ibid., at p. 853.

hardware; and the considerable experience of Comsat in the international communications satellite field, as manager of the Intelsat system and as a carrier's carrier for U.S. authorized users, as well as the strengthening factor of Comsat's financial position. The three parties would participate as equals, without placing any single owner in a position to control or dominate corporate or management decisions or depriving the corporation of flexibility to make future decisions on the basis of changing circumstances.[117]

In light of the Comsat's minority role within CML Satellite Corporation, the FCC found that the public interest does not require that Comsat elects between participating in CML Sat. Corp. or serving AT&T. Consequently, Comsat was free to implement the multipurpose CML system as well as to pursue its contractual arrangement with AT&T.[118]

For the Comsat/AT&T application to be accepted, in addition to being minority participant in the new corporation, Comsat was required to remove from its board of directors any person affiliated with AT&T.[119]

Because of financial reasons, Lockheed and MCI decided to forego participation. In 1974 Comsat General and International Business Machines Corporation (IBM) filed a joint petition for Commission approval of changes in the corporate structure of CML. Under the proposed change Comsat General would acquire 45% and IBM would require 55% and voting control through a

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117. Supra, footnote 110, at p. 1186.

118. Ibid., at p. 1188.

119. Ibid., at p. 1188-9.

wholly-owned subsidiary to be established for that purpose.[120]

The FCC disapproved the proposal, but delineated circumstances under which entry by Comsat and IBM would be considered. Restrictions on the Comsat/IBM entry were imposed in order to reduce the likelihood of its anticompetitive effects. To prevent IBM's abuse of its dominant position in the computer and data processing industries, the FCC required the venture to provide for interconnections of its customers' data processing and communications systems on reasonable terms and without discrimination. Moreover, IBM was required to create a separate corporate to operate its satellite system. This entity was forbidden to market IBM equipment, and IBM was forbidden to market satellite communications services except through the separate entity. To ensure that the venture would compete vigorously with AT&T, the FCC required that Comsat and IBM adopt one of three permissible forms of business organization:

> "(a) IBM and Comsat General may each choose to enter independently of the other, and Comsat General may also choose to enter alone or in another consortium without IBM. In the event that IBM chooses not to enter and participate in any domestic satellite system and Comsat General chooses to enter alone, or with other partners, Comsat General would be required to terminate its role as a lessor of a space segment to AT&T upon the expiration of its present lease arrangement with AT&T. However, if IBM enters independently (i.e., not in partnership with Comsat General nor as a lessee of a Comsat General space segment), then Comsat General may enter alone or in alternative consortium without any condition as to the AT&T lease;
> (b) Comsat General and IBM may choose to participate as partners in CML with another

120. 51, FCC 2d, (FCC 75-156, Docket No. 20221), in the matter of petition for approval of changes in Corporate Structure of CML Satellite Corp., p. 14., at p. 14.

> corporate partner(s) upon condition that no partner in CML shall have less than a 10% ownership interest or more than a 49% ownership interest or otherwise be in a position whereby it could exercise de facto control;
> (c) Comsat General and IBM may choose to have Comsat General provide a space segment to IBM under arrangements similar to those Comsat General has with AT&T domestically, upon condition that Comsat General shall not offer any communications common carrier services directly to the public, i.e., Comsat General would be required to choose between the provision of space segments pursuant to contract or the provision of common carrier services to the public."[121]

Following the CML decision, IBM and Comsat found a third partner, Aetna, to pursue the establishment of a partnership, Satellite Business Systems, inc. Under the agreement, each partner committed $55 million to the enterprise, and could provide additional funds if needed. During the pre-operational phase of the system the three partners would exercise equal control. When the system would become operational Aetna would have the choice to retain its one-third equity interest in SBS, on to convert a part of that investment to debt. In no event may Aetna's equity interest fall below 15 percent. Major decisions would require the unanimous consent of the partners.

SBS was organized as a partnership and was granted a license.[122]

Continued availability of requested satellite assignments is the essence of the open entry policy.

In the early 1980s operators pushed to get their satellites in orbit. Most did and the result was too much capacity and an inadequate return on their

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121. Ibid., at p. 38.

122. 62, FCC 2d, 1977, In Re Satellite Business Systems, p. 997 and U.S. V FCC, 652 F. 2d 72, 1980.

investment. That caused operators to proceed with much more caution and to avoid launching on speculation. The trend for satellite operators is to match supply and demand.[123]

3. The 1934 Communication Act

The Communication Act contains two distinct schemes of regulation: Title II of the Act deals with common carriers of communication services (both by wire and radio), while title III governs the use of radio spectrum, regardless of the nature of the service or use.

Broadcast status imposes content regulation[124] but no economic restriction on access requirements. On the other hand, common carrier status often requires approval of rates and service conditions[125] but does not restrict content.

There is no mutual exclusivity of application of the title II common carrier provisions and the title III provisions pertaining to radio. When enacted, the two titles were seen as applying to two largely discrete realms of activity. Radio technology had not, by 1934, achieved large scale application in the common carriage area, and was largely limited to the broadcasting activities which were originally the primary target of title III. Nonetheless, the language of title II,

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123. Stephens, G.M., Flexibility in the Next Generation, Satellite Communications, July 1990, p. 12, at p. 13-14.

124. Obligation to promote the electoral system, 47 U.S.C. S.312 (a) (7), and S.315; - prohibition of broadcasting obscene and indecent material (18 U.S.C. S.1464); - personal attack rules (47 CFR S.73 1920); - the political editorial rule (47 CFR S.73 1930); - prime-time access rule (47 CFR S.73 658 (j) (k); - and until recently the fairness doctrine 102, F.C.C. 2d, [Gen. Docket No. 84-282], (FCC 85-459), Fairness Doctrine, Report, p. 143. Vol. 17, 2 F.C.C. Rcd., (FCC 87-266), Syracuse Peace Council. Syracuse Peace Council v FCC, 867 F. 2d 654 (D.C.Cir. 1989).

125. 47 U.S.C. S.201 et seq.

from time of first enactment, extended its coverage to common carriage "by wire or radio."[126]

(i) Common Carrier

For the purposes of the Communication Act, a common carrier is "any person engaged as a common carrier for line ..."[127] The Commission's regulations offer a slightly more enlightening definition: "any person engaged in rendering communications service for hire to the public."[128] The uncertainty of the common carrier definition set forth in the statute and regulations invite recourse to the common law of carriers. An examination of the common law reveals that the primary sine qua non of common carrier status is a quasi public character, which arises out of the undertaking to carry for all people indifferently. This does not mean that the particular services offered must practically be available to the entire public. A specialized carrier whose service is of possible use to only a fraction of the population may nonetheless be a common carrier if he holds himself out to serve indifferently all potential users. Nor is it essential that there be a statutory or other legal commandment to serve indiscriminately. It is the practice of such indifferent service that confers common carrier status. That is to say, a carrier will not be a common carrier where its practice is to make individualized decisions in particular cases whether and on what terms to serve.[129]

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126. National Ass. of Regulatory Utility Commission v FCC, (1976) 525 F 2d 630, at p. 644.

127. 47 USC S.153 (h).

128. 47 CFR S.21.1.

129. Supra, footnote 126, at p. 640-2.

A second prerequisite to common carrier status is the requirement formulated by the FCC and with peculiar applicability to the communication field, that the system be such that customers transmit intelligence of their own design and choosing.[130]

While the Communication Act gives the Commission broad discretion in the regulation of telecommunications, it requires that the FCC pursue one primary goal: the attainment and maintenance of efficient nation-wide and worldwide communication service.[131] The Commission has pursued different policies over time in striving to achieve the goal. Recognition that a monopolized market is not likely to function as efficiently as a competitive one has caused the Commission to adopt, and since 1959 to implement consistently, the common carrier policy of introducing competition into theretofore monopolized markets wherever technological and economic conditions led entrepreneurs to seek to enter.[132]

Congress enacted S.214 to serve primarily as a protection against excessive expenditures on plant by rate-base regulated common carriers and against service discontinuance by carriers in areas where customers had no reasonable alternative service available.[133]

The comprehensive title II regulatory scheme was intended to constrain

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130. National Association of Regulatory Utility Commission v FCC, 533 F 2d 601 (1976), at p. 609.

131. 47 USC S.151.

132. Vol. 45, Federal Register, 1980, [CC Docket No. 79-252; FCC 80-629], Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations Therefore, First Report and Order, p. 76148-76178, at p. 76148.

133. Ibid., at p. 76162.

the exercise of substantial market power. When imposed on carriers without such market power, its effects are counterproductive to the advancement of the Act's express objectives as set forth in S.151.[134]

Carriers without market power are unable to sustain the kind of business practices Congress was concerned about in adopting S.214. These carriers are generally not in a position to pass the costs of unnecessary facilities on to customers. Rather than pay higher rates, customers in competitive communications markets will instead turn to other service providers. Furthermore, customers in a market characterized by competition have access to alternative services should one carrier discontinue service.[135]

Prior to the development of telecommunications competition, the various tariff and certification provisions of the Communication Act that subject offerings to routine regulatory review were applied to all common carriers, and generally to all their service offerings. However, since the competitive common carrier proceedings[136] distinction was drawn between dominant and non-dominant

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134. Vol. 47, Federal Register, 1982, [CC Docket No. 79-252; FCC 82-350], Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations Therefore, Second Report and Order, p. 37889-37896, at p. 37890.

135. Supra, 132, at p. 76162.

136. Vol. 45, Federal Register, 1980, [CC Docket No. 79-252; FCC 80-629], Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations Therefore, First Report and Order, p. 76148-76178. Vol. 47, Federal Register, 1982, [CC Docket No. 79-252; FCC 82-350], Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations Therefore, Second Report and Order, p. 37889-37896. Vol. 48, Federal Register, 1983, [CC Docket No. 79-252], Policy and Rules Concerning Rates for Competitive Carrier Services and Facilities Authorizations Therefore, Third Report and Order, p. 46791-3. Vol. 48, Federal Register, 1983, [CC Docket No. 79-252; FCC 83-481], Rates for Competitive Common Carrier Services and Facilities Authorizations Therefore, Fourth Report and Order, p.

carriers, that is to say between carriers who have power to control prices and carriers who do not have such power. While non-dominant carriers still remain subject to the substantive common carrier duties of the Act and its complaint processes, the Commission has resolved to regulate their offerings upon complaint, and not routinely.

Non-dominant common carrier regulation has two categories: streamlined regulations and forbearance.

Forbearance applies to domestic satellite resellers,[137] as well as domestic satellite carriers.[138] It involves: no required tariffs filings; and as long as the non-dominant carriers obtain all necessary authorizations from the Commission for use of radio frequencies, no required prior S.214 specific approval for any domestic line, provided they inform the Commission semi-annually of these additions.[139]

52452-63. Vol. 49, Federal Register, 1984, [CC Docket No. 79-252; FCC 84-394], Policy and Rules concerning rates for Competitive Common Carrier Services and Facilities Authorizations Therefore, Fifth Report and Order, p. 34824-31. Vol. 50, Federal Register, 1985, [CC Docket No. 79-252; FCC 84-566], Rates for Competitive Common Carrier Services and Facilities Authorizations Therefore, Sixth Report and Order, p. 1215-23. Vol. 50, Federal Register, 1985, [CC Docket No. 85-107; FCC 85-585], International Competitive Carrier Policies, Report and Order, P. 48191-48203. MCI Telecommunications v FCC, 765 F 2d 1186 (1985).

137. Vol. 48, Federal Register, 1983 [CC Docket No. 79-252; FCC 83-481], Rates for Competitive Common Carrier Services and Facilities Authorizations Therefore, Fourth Report and Order, p. 52452-63.

138. Vol. 49, Federal Register, 1984, [CC Docket No. 79-252; FCC 84-394], Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations Therefore, Fifth Report and Order, p. 34824-31.

139. 47 CFR S.63.07
The Sixth Report Vol. 50, Federal Register, 1985 [CC Docket No. 79-252; FCC 84-566], Rates for Competitive Common Carrier Services and Facilities Authorizations Therefore, Sixth Report and Order, p. 1215-

Streamlined regulations apply to non-dominant international common carriers.[140]

Only AT&T and certain non-contiguous service providers are dominant in the IMTS market for all countries.[141]

No carrier is dominant in the non-IMTS market.[142]

Comsat is dominant in the provision of Intelsat segment capacity, multi-

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23, altered forbearance program from permissive to mandatory arrangement by requiring all non-dominant common carriers of interstate telephone service to cancel tariffs and by refusing to accept subsequent filings.

In MCI Telecommunications v FCC, 765 F 2d 1186 (1985) the order was vacated and remanded. It was held that under the Communication Act, the Commission has no statutory authority to prohibit the filing of tariffs that, by statute, every common carriei "shall file.

"Congress has armed the FCC, in the Record Carrier Competition Act of 1981, with authority of the kind the Commission would exercise here without statutory change. In the R.C.C.A. Congress Instructed: the Commission shall, to the maximum extent feasible, promote the development of fully competitive domestic and international markets in the provision of record communication service, so that the public may obtain record communications service and facilities, the variety and price of which are governed by competition, in order to meet the purposes of this section, the Commission shall forbear from exercising its authority under title II of the Act as the development of competition among record carriers reduces the degree of regulation necessary to protect the public (S.222 (b) (1)).

But the Congress has not given the FCC new instructions for the case at hand." MCI Telecommunications v FCC, 765 F 2d 1186 (1985) at p. 1195.

140. Vol. 50, Federal Register, 1985, [CC Docket No. 85-107; FCC 85-585], International Competitive Carrier Policies, Report and Order, p. 48191-48203.

141. Ibid., at p. 48197-8.

142. Ibid., at p. 48198-9.

purpose earth stations services[143] and television services.[144] Comsat is non-dominant in its provision of IBS and end-to-end services.[145]

Tariffs filled by non-dominant international carriers are presumptively lawful. Only 14 days advance notice would be required before tariffs take effect and S.61.38 economic and cost support data would not be required to support these tariffs. The standard of review to suspend tariffs for non-dominant services would be whether the injury to competition which would result if the tariff were allowed to take effect is greater than the harm to the public from not allowing the tariff to take effect. The burden of proof will be on the party asking that the tariff not be allowed to take effect.[146]

Once a non-dominant international carrier obtained initial S.63.01 certification to provide service to a specific country that carrier would not be required to file further applications to add circuits within that same product market to serve that country. Rather, a non-dominant carrier would merely file notification on a semi-annual basis of the added circuitry on a country-by-country basis. Moreover, they will be required to give 120 days notice prior to

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143. Comsat is currently the fifty percent owner and operator of the seven multi-purpose earth stations operating in the continental U.S., Hawaii and Guam. These are the only earth stations of this type currently in service. While it is possible, since the earth station ownership decision, for other entities to construct new multi-purpose earth stations, this does not appear to be the direction that the market is taking.

144. The market for the provision of television service appears to be on the verge of expansion. Still, until these plans for alternative sources of television service materialize, the full regulatory oversight is retained in order to prevent Comsat from exploiting its current position as the only provider of TVS.

145. Supra, footnote 140, at p. 48200.

146. Ibid., at p. 48201.

discontinuing service.[147]

(ii) Broadcasting

"Broadcasting' means the dissemination of radio communications intended to be received by the public, directly or by the intermediary of relay stations.[148]

The primary touchstone of a broadcast service is the intent of the broadcaster to provide radio or television program service without discrimination to as many members of the general public as can be interested in the particular program as distinguished from a point-to-point message service to specified individuals. Broadcasting remains broadcasting even though a segment of the public is unable to view programs without special equipment.[149]

Broadcasting is under private control. However, certain uses of the airways, particularly political ones, were too central to democratic values to be left to the whim of the private broadcaster.[150] Therefore, the Communication Act imposed certain restraints upon broadcasters in S.312 (a) (7), which requires that qualified candidates for federal office be provided reasonable access to broadcast facilities, and S.315, which provides that, if one candidates is allowed to use a station, other qualified candidates must be given equal opportunity to respond.

Therefore, when a common carrier satellite leases its channels to a

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147. Ibid., at p. 48202.

148. 47 USC S.153 (o).

149. Subscription television service 3 FCC 2d, 1966, 1, at p. 9-10.

150. National Association of Broadcasters v FCC, (1984, App DC) 740 F 2d 1190., at p. 1199.

customer-programmer who does not own any transmission facilities, in such an arrangement, someone-either the lessee or the satellite owner is broadcasting. To hold otherwise would make it possible that through a general system of cross-leasing, all DBS systems could escape title III.[151]

The Communication Act explicitly prohibits the Commission from interfering with the exercise of free speech over the broadcast frequencies.[152] In addition, it provides that broadcast licensees are not to be treated as common carriers obliged to accept whatever is tendered by members of the public.[153] Both these provisions clearly manifest the intention of Congress to maintain a substantial measure of journalistic independence for the broadcast licensee.

The Communication Act directs the FCC to grant a station license to an applicant if the "public convenience, interest, or necessity" will thus be served.

In National Broadcasting Co. v U.S., the Supreme Court held that the Act's vague charge to the FCC entailed more than the mere technical management of the airwaves: "The radio spectrum simply is not large enough to accommodate everybody. There is a fixed natural limitation upon the number

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151. Ibid.

152. 47 USC S.326.

153. Ibid., S. 153 (h)
To hold otherwise would permit the view of the affluent to prevail over those of others, since they would have it within their power to purchase time more frequently. Moreover, the time allotted for editorial advertising could be monopolized by those of one political persuasion. The result would be a further erosion of the journalistic discretion of broadcasters in the coverage of public issues, and a transfer of control over the treatment of public issues from the licensees who are accountable for broadcast performance to private individuals who are not. The public interest would no longer be paramount but, rather, subordinate to private whim (Columbia Broadcasting System, inc., v Democratic Nat. Committee, (1973) 36 L Ed 2D 772, at p. 795-6).

of stations that can operate without interfering with one another. Regulation of radio was therefore as vital to its development as traffic control was to the development of the automobile ... But the Act does not restrict the Commission to supervision of traffic. It puts upon the Commission the burden of determining the composition of that traffic."[154]

The scarcity argument is essentially that the number of electronic frequencies that can carry broadcasts is limited, and, thus commercial broadcast stations should be "fiduciaries" for the public at large. "With the number of radio channels limited by natural factors, the public interest demands that those who are entrusted with the available channels shall make the fullest and most effective use of them."[155]

The fairness doctrine flows directly from the public trustee notion. It is a codification of Commission decisions made during the administration of the statutory public interest licensing standard and confirmed on judicial review by the Supreme Court of the U.S.[156] It reflects a tension between the First Amendment right to express ideas freely and the limited availability of broadcast licenses granting control of access to the public airwaves.[157] The fairness doctrine places a two part obligation upon broadcast licensees. First, broadcasters have an affirmative obligation to cover vitally important controversial issues of interest in their communities. Second, they are obliged to provide a reasonable

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154. National Broadcasting Co. v U.S., 319 U.S. 190 (1943) at p. 213.

155. Id. at p. 218.

156. Red Lion Broadcasting Co. v FCC, 395 U.S. 367 (1969).

157. Horowitz, L., Laying the Fairness Doctrine to Rest.: Was the Doctrine's Elimination Really Fair? Vol. 58, No. 5, George Washington Law Review, June 1990, p. 994.

opportunity for the presentation of contrasting viewpoints on those controversial issues of public importance that are covered.

Following the 1985 Fairness Report[158], where the Commission found that the fairness doctrine no longer served the public interest,[159] it repealed the fairness doctrine holding that it violates the First Amendment and contravenes the public interest.[160] The U.S. Court of Appeals for the District of Columbia Circuit upheld the Commission's repeal of the fairness doctrine in its entirety.[161]

In recent years, a movement has developed to reduce or abolish government regulation of the broadcast media.[162] The primary arguments have been 1) that the rationale of spectrum scarcity, which has provided the basic

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158. 102, F.C.C. 2d, [Gen. Docket No. 84-282], (FCC 85-459), Fairness Doctrine, Report, p. 143.

159. Evaluating the explosive growth in the number and types of information sources available in the marketplace, the Commission found that the public has access to a multitude of viewpoints without the need or danger of regulatory intervention (102, F.C.C. 2d, [Gen. Docket No. 84-282], (FCC 85-459), Fairness Doctrine, Report, p. 143, at p. 224). The Commission also determined that the fairness doctrine "chills" speech, finding that in stark contravention of its purpose the doctrine operates as a pervasive and significant impediment to the broadcasting of controversial issues of public importance (at 169). In addition, the agency found that its enforcement of the doctrine acts to inhibit the expression of unpopular opinion (at 188-90). It places the government in the intrusive role of scrutining programs content (at 190-192); it creates the opportunity for abuse for partisan political purposes (at 192-4); and it imposes unnecessary costs upon both broadcasters and the Commission (at 194-6).

160. Vol. 17, 2 F.C.C.Rcd., (FCC 87-266), Syracuse Peace Council.

161. Syracuse Peace Council v FCC, 867 F. 2d 654 (D.C.Cir. 1989).

162. In 1982 the Communication Act was amended to empower the FCC to allocate new broadcast licenses by a lottery; - in the 1981 case of FCC v WNCN listeners guild (450 U.S. 582/1981), the Supreme Court approved the FCC's decision to eschew regulation of radio station "formats"; - fairness doctrine was abolished. (Supra, footnote 160 and 161).

justification for broadcast regulation, is no longer plausible (if it ever was) because of the proliferation of new media such as cable, and 2) that "regulation" by the free market would more effectively respond to public desires and promote the public interest than regulation by a government agency like the FCC.

4. Licensing of Communications Satellites

Pursuant to its obligation under the Outer Space Treaty to authorize and supervise private space activity, the U.S. requires persons, natural and legal, to obtain a license from the appropriate regulatory agency before engaging in space activity. The licensing regime for communications satellites is intended to encourage private space activities. It reflects the U.S. philosophy that minimal regulation and government intervention will encourage and facilitate private enterprise in space.[163] The FCC is the regulatory and licensing authority for communications satellites.

U.S. licensing regime for communications satellites consists of statutes and implementing regulations. The main statute under which communications satellites are licensed is the Communication Act of 1934.

The licensing requirement for communications satellites is set forth in S.301 of the Communication Act. It provides:

> "no person shall use or operate any apparatus for the transmission of ... communications or signals by radio ... from one place in ... the U.S. ... except under and in accordance with this Act and with a license in that behalf granted under the provision of this Act."[164]

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163. Meredith, P.L., A Comparative Analysis of U.S. Domestic Licensing Regimes for Private Commercial Space Activities, Colloquium, 1989, p. 373., at. 374.

164. 47 U.S.C. S.310.

Pursuant to S.308, 309 (a) and 319 of the Communication Act, the FCC will license a communication satellite only if it determines that the "public interest" will be served thereby. This means that the FCC must be satisfied that the public will derive some benefit directly or indirectly from the proposed system.

The FCC has adopted policies and regulations that implement the Communication Act. The regulations, which mainly concern criteria which must be met in order for the issuance of a license, vary from one type of communication satellite to another.

(ii) International Fixed Satellite Services

International fixed satellite applicants must meet legal, financial and technical requirements under S.308 (b) of the Communication Act.

Legal qualifications refer to alien ownership prohibitions and various character qualifications. Since separate system operators will be non-common carriers, S.310 (b) of the Communication Act will not apply.[165]

The fact that the applicant must undergo the Intelsat consultation process and the resulting continued uncertain status of the application pending this process means that the applicant is unlikely to receive from any banking or financial institution irrevocable financial commitments until the consultation process is completed. However, issuance of some kind of preliminary authorization is necessary for an applicant to obtain foreign authorization of its proposed system - a condition precedent for U.S. initiations of the Article XIV (d) consultation process. In addition, the applicant will have difficulty in locating

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165. Supra, footnote 76, at p. 42311.

customers for its proposed capacity and/or services absent both a construction permit and successful completion of the Article XIV (d) consultation process.[166]

In light of these factors, the Commission adopted a two-stage approach to determining the financial qualifications of the applicant. In the first stage, a conditional construction permit will be issued if the applicant shows: 1) the estimated costs of proposed construction and launch, and any other initial expenses for the proposed space station(s); 2) the estimated operating expenses for one year after launch of the proposed space station(s); and 3) the source(s) or potential source(s) of funding of the proposed system for one year, which would include the identity of financiers and their letter of financial interest. The conditional construction permit does not permit the applicant to begin construction, but is intended to set forth the approved technical parameters of the proposed system for the purpose of Intelsat technical coordination under Article XIV (d).[167]

The Commission will issue an order permitting construction by the applicant only upon a showing of the applicant's current financial ability to meet the costs of construction and launch, and operating expenses for one year after launch. The applicant must meet this requirement no later than 60 days following receipt by the Commission of the State Department's letter stating that the U.S. has fulfilled its obligations under the Intelsat Agreement and that the Commission may proceed with final authorization of the proposed systems. Should the conditions of the second stage not be timely satisfied, or untimely satisfied without good cause shown, the conditional construction permit will

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166. Ibid., at p. 42311-2.

167. Ibid., at p. 42312.

become null and void and the orbital locations tentatively assigned to the applicant will became available for reassignment.[168]

An entity is permitted to initially apply for only two orbital positions in a given band for international satellites.

In a case where an applicant desires orbital assignments for an international satellite as well as a satellite in the domestic fixed-satellite service, the Commission will only permit applications for a total of two satellites for both services. The applicant will have the choice of providing both domestic and international service on one or both satellites, or providing one type of service on one satellite and the other type of service, or a combination of services, on the other.

If an applicant proposes to provide international service to different regions of the world, which are so widely separated that more than one satellite must be used to provide the proposed service, the Commission may permit an applicant to initially build and launch more than two satellites.[169]

Any additional orbital position will not be assigned to an operator for international "expansion" satellites until there is a showing that in-orbit satellites are essentially filled and that an additional orbit location is needed to satisfy firm customer growth requirements, including reasonable protection requirements. In cases where a single satellite is used to provide both international and domestic service, this requirement will apply individually to

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168. Ibid., at p. 42312; Vol. 51, Federal Register, 1986, [CC Docket 84-1299; FCC 86-144], Common Carrier: Reconsideration of Establishment of Separate Satellite Systems for International Communications, Memorandum Opinion and Order on Reconsideration, p. 17631.

169. Ibid., at p. 42315.

each type of service. That is, capacity dedicated for each service must be essentially filled before an authorization will be made for an expansion satellite.[170]

Orbital assignments are made, only on a temporary basis, subject to relocation on thirty days' notice by order of the Commission.[171]

The Commission will apply two-degree criteria to spacing between U.S. satellites, and will be encouraging the acceptance of the same by administrations with which it will be coordinating.[172]

Applicants must demonstrate that their systems will serve the U.S. "national interest".[173]

Furthermore, they must satisfy the following criteria in order to obtain a license: an operating agreement must be obtained with a foreign country; technical and economic harm coordination with Intelsat under Article XIV (d) of the Intelsat Agreement must be undertaken; and the satellite transmissions must not interconnect with the public switched network.[174]

(iii) Domestic Fixed Satellite Services

The authorization process for a domestic satellite had generally occurred in three distinct phases: 1) issuance of a construction permit; 2) grant of launch authority and tentative orbital assignment; and 3) grant of operating authority

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170. Ibid., at p. 42315.

171. Ibid., at p. 42316.

172. Ibid., at p. 42313.

173. 47 U.S.C. S.701 (d) and S.721 (a) (6).

174. Supra, footnote 66, at p. 1579-80.

under both title II and title III of the Communication Act. In the construction permit phase, the Commission considered the applicant's financial, technical and legal qualifications, and the technical characteristics of the proposed satellites. In the launch authorization, the Commission addressed the question of a specific orbital assignment for the constructed satellite. Finally, a grant of operating authority was predicated on a showing by the applicant that the satellite had been, in fact successfully positioned in orbit. The applicant also had to demonstrate that it had complied with all the conditions which might have been imposed by previous authorizations.[175]

In light of the changed circumstances[176] and disadvantages associated with this procedure,[177] the FCC concluded that the launch and orbital assignment issues could be determined concurrently with the construction authorization.[178]

Furthermore, a radio license would be routinely issued pursuant to S.319 (c) of the Communication Act upon a showing that the satellite had been

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175. 84 F.C.C. 2d (FCC 80-711), Assignment of Orbital Locations to Space Stations in the Domestic Fixed - Satellite Service, Memorandum Opinion and Order, p. 584, at p. 609.

176. While the initial generation of satellites was authorized without either operational or regulatory experience, this is no longer the case. Sufficient information are available at the time of construction so that the FCC can make tentative decisions regarding launch and orbital locations. In addition, deferral of the launch authorization and orbital assignment until the satellite is constructed would serve no real benefit, in light of the implementation of an orbit deployment plan for all of the proposed systems.

177. Apart from the operational uncertainties imposed on satellite operators, deferral hampered the FCC's ability to timely discharge its treaty obligations to effect international frequency coordination for domestic satellites. As it may take up to 2 or 3 years to complete these coordination procedure, the process should properly commence at the earliest practical date.

178. Supra, footnote 175, at p. 610.

constructed and launched in accordance with the terms and conditions set forth in the construction permit. Rather than require the permittee to fill a separate application, the FCC will grant radio licenses for those satellites authorized for launch. This procedure will eliminate duplicative regulations and will enable the satellite operator to begin service at the earliest possible date after successful launch.[179]

Finally, since the competitive carrier rulemaking, common carrier authority is implicit in the radio station authorization thereby eliminating the former duplicative S.214 application.[180]

The Commission has, since Domsat I, required all domestic fixed satellite applicants to demonstrate that they are financially qualified to construct, launch and operate systems promptly. Its treatment of applicant qualifications was lenient when the number of competitors was small and it was possible to afford the opportunity to all applicants to pursue their planned systems.

However, in 1985, the Commission was faced with more applications than available orbital locations.[181] A significant number of these applications appeared to be speculative in that the applicant either had not documented firm financial capabilities to construct the proposed satellite system or has requested the assignment or orbital locations in excess of its ability to use them efficiently to provide service to the public. The FCC required all applicants to demonstrate the financial capability to construct, launch and operate for a year their proposed

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179. Ibid., at p. 612.

180. Ibid., at p. 612.

181. Vol. 50, Federal Register, 1985, [CC Docket No. 85-135; FCC 85-238], Licensing Space Stations in the Domestic Fixed - Satellite Service, Notice of Proposed Rulemaking, p. 19413., at p. 19414.

systems immediately upon grant of the requested authorization.[182] By strictly enforcing this requirement, the FCC was able to accommodate all qualified applicants.

Financial qualifications are required in the domestic satellite field to ensure that the development of the available but unused orbit and spectrum resource is not delayed, and that the public is promptly provided with needed satellite service. Moreover, grant of an authorization to an applicant who is not financially qualified is now likely to preclude qualified applicants from constructing and operating proposed systems. Requiring that an applicant demonstrate that it is financially qualified also discourages the filing of purely speculative applications for the purpose of selling a bare license and privately profiting from regulatory process.[183]

Because of the technological advances that are continuously being incorporated into satellite designs, no codified technical design standards were adopted in part 25 of the rules beyond those generally specified in the international Radio Regulations. However, the orbital arc congestion at 4/6 GH_z and 12/14 GH_z for domestic satellite services became so acute that the FCC required that future applications for new domestic space stations satisfy at least present state-of-the-art standards if they are to be accepted for filing.[184]

Because of the interrelationship between orbital assignments, satellite

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182. Vol. 50, Federal Register, 1985, [CC Docket No. 85-135; FCC 85-395], Licensing Space Stations in the Domestic Fixed - Satellite Service, Final Rule, p. 36071, at p. 36073.

183. Supra, footnote 181, at p. 19416.

184. Vol. 48, Federal Register, 1983, [CC Docket No. 81-704; FCC 83-184], Licensing of Space Stations in the Domestic Fixed - Satellite Service and Related Revision, Final Rule, p. 40233, at p. 40244.

design, and intended service areas of the proposed satellites, the Commission determined that the most efficient administrative procedure would be to consider a finite, well-defined set of proposals. A group processing procedure avoids the need to begin anew the complex evaluation process each time a new and interrelated application was filed, and facilitates efficient assignment of orbital locations.[185]

The development of a competitive market structure depends on the entrance into the market of a sufficient number of competitors. That, in light of the physical limitations on the usable geostationary orbit depends on the Commission's ability to accommodate a sufficiently large number of satellites in suitable orbital locations. The objective of the policy which governs the assignment of orbital locations is to accommodate as many applicants as possible with a minimum of regulatory intrusion. Procedures which promise expensive and prolonged administrative proceedings (such as evidentiary hearing, for example) have been avoided.[186]

In assigning orbital locations to existing and new satellite carriers, the FCC is guided by the requirement that each applicant must make a sufficient showing of potential public benefit to justify the assignment of orbital locations and frequencies.[187]

Newly authorized systems relying on generalized projections of traffic

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185. Vol. 48, Federal Register, 1983, [FCC 83-183], Reconsideration of Commission Decision Establishing Processing Procedure for Domestic Fixed - Satellite Applications, Notice of Order on Reconsideration, p. 31309, at p. 31043.

186. Supra, footnote 175, at p. 588.

187. Ibid., at p. 603.

have been assigned two orbital locations. This policy rests on the basis that two locations are necessary and sufficient to establish a competitive market presence.[188]

However, when an existing operator seeks to expand an authorized system or a new entrant requests more than two orbit locations, a concrete showing of need must be made. Additional locations would be assigned only upon a showing that in-orbit satellites are essentially filled and that an additional orbit location is needed to satisfy firm customer growth requirements.[189]

Consistent with its policy of ensuring that underutilized satellites do not occupy orbital locations and thereby block entry by other qualified entities, the FCC determined that it may require collocation of in-orbit satellites if a system as a whole, and not any satellite in particular, is not essentially filled.[190]

The availability of in-orbit spare capacity for any space station licensee is limited to one spare satellite used for occasional or preemptible services within the system.[191]

Orbital spacing criteria of 4° at 4/6 GH_z and 3° at 12/14 GH_z were adopted in 1974 and 1977 respectively. These spacings provided a balance between the number of satellites proposed for service and reasonably economical ground facilities. However, in 1983, in order to meet growing user demand, the FCC

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188. Supra, footnote 181, at p. 19418.

189. Ibid., at p. 19418.

190. Vol. 51, Federal Register, 1986, [CC Docket No. 85-135; FCC 86-497], Domestic Fixed - Satellite Service; Licensing of Space Stations in the Domestic Fixed-Satellite Service, Final Rule, p. 44068, at p. 44069.

191. Supra, footnote 184, at p. 40246-7.

adopted 2° orbital spacing criteria for both pairs of bands.[192]

An applicant's request for a particular orbital location is not dispositive of what location will actually be assigned. The specific orbital locations assigned by the Commission to each satellite takes into account not only the requirements of the applicant, but also the requirements of other satellite operators.

Conflicting requests by different applicants do not give rise to comparative hearing rights. Although a hearing cannot be invoked with respect to the actual orbital location assigned to any particular satellite, such hearing rights might be invoked in the event all applications of fully qualified applicants within a processing group cannot be granted.[193]

All orbital assignments made to date have been on a temporary basis only, subject to relocation by Commission order. A replacement satellite might not be authorized for the same location as the original satellite. Providing an expectancy that the same number of orbital locations will be available to operators may tend to stifle technology because there could be less incentive to increase efficiency. This could also block more efficient licensees, including new entrants. On the other hand, in the satellite market where the risks are high and the financial investments substantial, predictability and stability are desirable if investment and innovation are to be encouraged. In light of these facts, any changes in orbital locations will be directed by the Commission only after careful consideration of all public interest factors and with an attempt to minimize the

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192. Ibid., and Vol. 50, Federal Register, 1985, [Adopted: July 25, 1985; Released: August 27, 1985), Assignment of Orbital Locations to Space Stations in the Domestic Fixed-Satellite Service; Memorandum Opinion and Order, p. 35-229.

193. Supra, footnote 185, at 31042.

adverse impact on any licensee.[194]

In light of growing demand and rapidly changing technology the FCC does not believe it prudent to make long-term licensing decisions that would prematurely freeze its ability to respond to the challenges that it will face in the future.[195] Decisions regarding replacement satellites should not be made more than five years in advance. This is sufficient time for satellite operators to construct systems and bring them into service.[196]

The FCC's licensing objectives are to prolong open-entry, avoid the administrative costs and delays associated with comparative hearings, assign orbit positions in an efficient manner that maximizes domestic satellite services to users. However, the Commission can no longer warrant that it will be able to grant every orbital assignment that may be requested by qualified applicants in the next group of applications. Therefore, comparative hearings or other administration selection procedures may be necessary to determine which of these requests will be granted.[197]

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194. Supra, footnote 175, at p. 601.

195. In Comsat General Corporation, the Commission granted AT&T authority to construct and launch two replacement satellites but deferred a request for a third replacement satellite, stating that: "it would be unwise to authorize in 1980 launch of a satellite which will not be required until 1987 and which should be functioning through the mid-1990's. State-of-the-art advances could well render the satellite obsolete by 1989. Furthermore, we cannot predict with any degree of confidence whether that satellite will be adequate to meet, or, indeed, even necessary to meet, AT&T's service requirements in 1987." (84 FCC 2d 547, at p. 558).

196. Supra, footnote 182, at p. 36076.

197. Supra, footnote 184, at p. 40245.

(iv) Direct Broadcasting Satellite Services

The FCC established rules for DBS for the interim period prior to the 1983 RARC. It reasoned that by starting the authorization process under interim rules, it would permit implementation of the service several years earlier than if it waited until the outcome of the RARC was known and permanent rules were subsequently established. Moreover, authorization of interim DBS systems would provide valuable experience that would allow the FCC to make better informed judgments concerning permanent regulations.[198]

The 1977 and 1979 WARC anticipated that Region 2 countries might wish to implement interim DBS systems, and their Final Acts expressly permit interim authorizations.

The regulatory scheme for DBS was designed to minimize regulation and to rely as the competitive forces of the marketplace. DBS licensees were not made subject to any of the ownership limits that apply to conventional broadcasters, and thus no limit was imposed on the number of channels a single DBS operator could control. In addition, no access requirements were imposed, unless the DBS operator chooses to operate as a common carrier.[199]

DBS systems were not required to operate under a particular service classification (common carriers or broadcasters). Classification questions will be resolved in the context of considering each individual application.[200]

Under the interim rules DBS applicants were required to conform to the

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198. Vol. 47, Federal Register, 1982, [Gen. Docket No. 80-603; FCC 82-285], Development of Regulatory Policy in Regard to DBS for the Period Following the 1983 RARC, Interim Rule, p. 31555, at p. 31558.

199. Ibid., at p. 31570.

200. Ibid., at p. 31568.

technical guidelines specified in the WARC-77 Final Act. All interim authorizations were subject to modifications, as the Commission deemed necessary, in order to comport with determinations made at RARC-83 and any other policies and rules which the Commission may thereafter conclude are necessary or appropriate in the public interest.

Frequencies and orbital positions were not to be assigned until completion of the 1983 RARC.

In lieu of stringent financial showings, the Commission required that parties granted authorizations proceed with diligence in constructing interim DBS systems. Interim DBS systems will be required to begin construction or complete contracting for construction of the satellite stations within one year of the grant of the construction permit. The satellite stations will also be required to be in operation within six years of the construction permit grant. All applications for interim DBS systems were granted for a period of five years.[201]

The RARC-83 formulated specific technical parameters and an allocation plan which met most of the desired channel requirements of the participating Region 2 nations. The Final Act provided for considerable flexibility in implementation. Consequently, nations may deviate from the plan without prior consent provided that no other nation's overall equivalent desired-signal-to-underived-signal protection margin is reduced as outlined in the Final Act. Otherwise, deviations are permitted only with the consent of the affected nations' administrations. To allow additional flexibility, the U.S. took reservations on two significant technical issues at the RARC-83 conference concerning antenna

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201. Ibid., at p. 31572-3.

polarization and power flux density.[202]

(v) Mobile Satellite Services

Having found that it was inadvisable to divide the allocated frequencies for a mobile satellite service (MSS) to accommodate multiple MSS systems, the FCC concluded that a single MSS system would best serve the needs of MSS users in the most expeditious manner. A multi-ownership arrangement for the system was adopted. Since only one MSS license would be granted, the Commission stated that the MSS space segment operator would be regulated as a common carrier. However, as there appears to be, at least for some of the proposed MSS services, substitute services available, and because the service is in a developmental stage, the FCC decided to classify the MSS licensee as non-dominant.[203]

The American Mobile Satellite Company (AMSC) was formed and is currently building an MSS system. AMSC is licensed to provide the full range of land, maritime, and aeronautical services. The first AMSC satellite is scheduled to be launched in 1993.[204]

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202. Vol. 50, Federal Register, 1985, [MM Docket No. 85-32; FCC 85-61], Technical Standards for DBS, Amendment, Proposed Rule, p. 6971, at p. 6972.

203. Vol. 52, Federal Register, 1987, [Gen. Docket 84-1234], Mobile Satellite Service; Policies Pertaining to the use of Radio Frequencies in a Laud Mobile Satellite Service for the Provision of Various Common Carrier Services, Policies and Procedures, Report and Order, p. 4017, at p. 4017.

204. Smith, M.L., Mobile Satellite Communications: Issues for the 1990's, vol. 18, no. 2, J. Space L., 1990, p. 147, at p. 152.

(vi) Radiodetermination Satellite Services

The radiodetermination satellite services (RDSS) are not regulated on a common carrier basis.

RDSS applicants are required to demonstrate their financial preparedness to assume the costs and liabilities of constructing and launching their systems and operating them for one year by submitting a balance sheet reflecting assets sufficient to meet these costs, or by submitting an exhibit indicating sufficient anticipated income or revenues from system operation.

The FCC also adopted a blanket licensing procedure for transceiver units.[205]

205. Vol. 51, Federal Register, 1986, [Gen. Dockets 84-689; RM-4426 and 84-690; FCC 86-209], Radiodetermination Satellite Service; Policies and procedures for the Licensing of Space and Earth Stations in the Radiodetermination Satellite Service, Final Rule, p. 18444.

CHAPTER V : CONCLUSION

The main issue affecting the access to the geostationary orbit is how to reconcile freedom of access, inherent in any res communes regime, with equitable sharing of accessed benefits in the geostationary orbit, where the high potential for mutual interference among two or more entities inevitably requires extensive coordination and often entails compromise of optimal configurations for telecommunication satellite systems.

The Outer Space Treaty establishes the basic principles of international law applicable to outer space. It was adopted before any significant activity in this field had occurred. The provisions of the Treaty were intended to provide the framework for subsequent treaties which will elaborate the law concerning the specific issues.

The unique advantages of the geostationary orbit, the possibility of conflict over rights to positions in it, the permanent character of its use, as well as frequency interference, make it necessary that the specific legal regime for the geostationary orbit be adopted.

The use of the geostationary satellites for telecommunication purposes is lawful exercise of the freedom of use of outer space. It would be an illusory freedom if the right to the exclusive use of the geostationary orbital slot where the satellite is placed is not a concomitant right to the freedom. Satellite communication networks are rarely set up for a limited duration, but are generally intended for permanent use. States have no interest in periodically shuffling their satellites around and reorienting all of their Earth stations for the sake of avoiding permanent occupancy. The objections to permanent occupancy

arise from countries without satellites. As more and more countries acquire satellites in the geostationary orbit, there will be greater resistance to any definite requirements for limited period of occupancy. The essential objections of prospective satellite users are not to the principle of permanent occupancy as such, but to permanent occupancy of all the assignments held by the current major system operators at the expense of new and future operators. The real problem is not one of permanent occupancy per se, but one of access. If the problem of access can be resolved to everyone's satisfaction, then definitely denying indefinite occupancy becomes counter-productive.

At present, specific regulations that govern the access and use of the geostationary orbit are established only at the technical level by the ITU. While the issue of special regime of the geostationary orbit has been raised in COPUOS, the views of states were too divergent to lead to any agreement.

The rules developed by the ITU (e.g. the first-come, first-served regime; a priori plans) are inadequate standards upon which to regulate access to the geostationary orbit.

Under the first-come, first-served rule, the first nation to place a satellite in orbit acquires significant advantages over others. The ITU Convention and the Radio Regulations do not adequately provide for later users. They contain no mechanisms for accommodation other than those voluntarily undertaken.

The concern was raised that the first-come, first-served rule implies pre-emption for early comers and is therefore in conflict with the principle of equality laid down in the 1967 Treaty. However, it seems that this argument should no longer be asserted. The first-come, first-served regime has been approved by the Final Acts of the Space WARC-1988, in a multilateral forum

attended by over 100 countries.

Though ITU representatives patiently explain that the assignment of an orbital position does not represent appropriation of outer space, which would contravene both the Outer Space Treaty and the ITU's jurisdictional authority, an a priori plan does reverse the criteria by which preferential rights are determined in interference disputes. Under the a priori plan, the superior bargaining position rests with the state whose service conforms to the plan.

Although a priori planning has great appeal as a means of guaranteeing access to the geostationary orbit, only countries prepared to orbit their satellites have any utility for the reserved orbital position of a priori plan. Access to the geostationary orbit is a necessary, but far from sufficient condition for developing country utilization of satellite technology. Unless more progress is made on the underlying problems of financing for developing country telecommunication, transfer of technology, and training in both management and application, a guarantee of access to the geostationary orbit may be a hollow victory for the developing world.

A priori plans are made on the basis of present and predicted future needs. One of the main difficulties with constructing such plans is that each country tends to overstate its requirements in order to be sure to get all it needs. There are few accepted or objective criteria for evaluating each country's stated need.

The technical assumptions used for planning are based on the technology when the plan is adopted. They risk obsolescence in the light of new development. However, it may be difficult to modify the plan to take these improvements into account. The obsolescence of the 1977 Plan has resulted,

in some parts of the world, in the use of fixed-satellite systems bands for broadcasting type systems.

The main criticism of the planning approach is that it lacks the flexibility to adjust quickly and easily to changes in requirements and to technological changes. The 1977/1983 Plans and the 1988 FSS Plan were developed separately, and therefore, administrations do not have the same orbital positions using frequencies from the two plans. Because the orbital positions are different, one or the other plan must be changed, which will be difficult in the framework of the applicable procedures.

In the light of fluid character of user demand and operational technology, a system is needed to allow for periodic revision of agreements that either fail to, or incorrectly anticipate future circumstances. As satellite systems are not launched in one batch on some periodic schedule, planning forums will always be required to deal with a wide variety of remaining satellite lifetimes and satellite networks cannot be treated in precisely the same fashion.

The a priori plans do not require a country to be able to use the geostationary orbit at any given time. Consequently, a large number of orbital slots remain unutilized.

The planning method may be regarded as adequate standard upon which access to the orbit/spectrum resource is regulated only if all states covered by the plan are able to use it. As this is not the case, a formula in which a country is guaranteed access to the geostationary orbit when it actually intends to use it, is preferable. However, this approach poses its own practical problems of enforcement.

The use of the geostationary orbit requires such arrangement which are

both equitable and flexible and take into consideration the economic, technical and legal aspects.

Efficiency, economy and equity are conflicting criteria. The utilization of the geostationary orbit requires analysis of different fact situations and assessments of competing needs so that the objective of distributive justice can be realized. This can result from an examination of specific needs rather than by way of formalized abstraction.

The equitable access doctrine mandates that opportunities must exist for all countries to satisfy their requirements for satellite communications services. The determination of these requirements and the method of satisfying them is left to the sovereign initiative of each country. The U.S., for example, will be able to maintain its open entry policy and its competitive domestic satellite telecommunications market, to the extent that the international approach to orbit/spectrum management provides for continued availability of requested satellite assignments. Any constraint upon currently requested and used satellite systems in excess of that needed to assure continued assignment availability would constitute a decrement of sovereign initiative and, thereby, undermine the equitable access doctrine. It is only when future assignment availability appears problematic that the doctrine mandates that the nature of requested satellite assignments be modified. Again, administrative modifications of the nature of satellite assignments is not to be greater than is necessary to assure continued availability of future satellite assignments.

In the light of the wide gap between developed and developing countries and the difference in their telecommunication policies, efficient and equitable exploitation of the geostationary orbit requires restrictions on national

sovereignty and compromises from all concerned. However, most governments are reluctant to surrender sovereignty even in minor issues. Substantive factors contribute to this reluctance. Sovereignty allows a government greater freedom in formulating its policy goals and a greater choice of instruments with which to pursue these goals. The more government's goals differ from those of others, the greater the perceived cost of surrendering sovereignty. Another reason for this reluctance is the absence of a sufficient community of interest among the participating governments.

Failing cooperation, efficient regulation of the geostationary orbit requires coercive powers, that is, creation of a management authority with the power to adjudicate and to impose its decisions on any uncooperative user of the resource.

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