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Third Party Access to Data Obtained via Remote Sensing: International Legal Theory versus Economic and Political Reality

David A. Greenburg

NOTES

Third Party Access to Data Obtained via Remote Sensing: International Legal Theory versus Economic and Political Reality

*by David A. Greenburg**

I. INTRODUCTION

Remote sensing by satellite, a product of the union of advances in space technology and the computer-fueled information explosion, represents both a great step forward in man's ability to learn about his planet, and in the formation of a "new information transfer process."[1] Remote sensing has been defined as a "system of methods for identifying the nature and for determining the condition of objects on the earth's surface and of phenomena on, below or above it, by means of observations from airborne or spaceborne platforms."[2]

This Note is concerned with remote sensing by satellite, as contrasted with other varieties of sensing such as direct human observation and measurement, and high altitude aerial photography. Several unique properties of remote sensing by satellite distinguish it from earlier methods. These include the capacity to operate the system easily once it is

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* Case Western Reserve University School of Law, J.D. (1983).

[1] Ambrosetti, *The Relevance of Remote Sensing to Third-World Economic Development: Some Legal And Political Aspects*, 12 N.Y.U.J. INT'L L. & POL. 569, 590 (1980), citing Stoebner, *Remote Sensing of Earth Resources: Technique and Law*, in LEGAL IMPLICATIONS OF REMOTE SENSING FROM OUTER SPACE 33, 37-38 (N. MATTE & H. DESAUSSURE EDS. 1976)[LEGAL IMPLICATIONS OF REMOTE SENSING FROM OUTER SPACE is cited hereinafter as Matte & DeSaussure].

[2] Magdelénat, *The Major Issues in the "Agreed" Principles on Remote Sensing*, 9 J. SPACE L. 111 (1981), citing U.N. Doc. A/AC.105/98] (1972).

established, to observe other lands without intruding into adjacent countries or their airspace, to sample very large areas in a single scene, to produce an enormous flow of data in digital form for computer processing,[3] and to monitor dynamic changes in the earth's surface.[4]

Since the United States launched the world's first civilian remote sensing satellite (ERTS-1, now renamed LANDSAT 1) in 1972, the applications and potential uses for remote sensing have been greatly expanded. Data obtained from remote sensing satellites has proven useful in assessing and meeting needs for transportation, food, water,[5] geology and mineral resources,[6] oceanography and marine resources,[7] land management and forestry, civil engineering, cartography, coastal zone management, pollution monitoring[8] and weather and natural disaster information.[9] With the rapid growth of technology[10] and the realization that the resources of this planet are limited, it has become clear that remote sensing has enormous potential in the above applications as well as others yet to be discovered. There is little doubt that the application of space technology such as remote sensing can lead to faster economic growth and development.[11] Space technology provides a way of leap-frogging obsolete technologies while retreating from percolation and trickle-down models of development for which developing countries do not have the time.[12] The

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[3] OFFICE OF TECHNOLOGY ASSESSMENT, U.S. CONGRESS, PUB. NO. STI-177, CIVILIAN SPACE POLICY AND APPLICATIONS 53 (1982) [hereinafter cited as SPACE POLICY].

[4] Ambrosetti, *supra* note 1, at 571. This ability is a result of the satellite's capability for repeated coverage of a given area of the earth's surface for an extended period of time.

[5] *UNISPACE 82 News*, no. 2, Dec. 1981, at 1. Transportation applications include route planning and construction; food applications include the collection of information pertaining to crops and livestock; water related applications include monitoring surface water and aiding in the search for subsurface water. The development during the 1980's of sensors capable of monitoring soil moisture could become an important contribution to the efficient use of water resources.

[6] Magdelénat, *supra* note 2, at 112.

[7] *Id.*

[8] SPACE POLICY, *supra* note 3, at 55.

[9] Mossinghoff & Fuqua, *United Nations Principles on Remote Sensing: Report on Developments, 1970-1980*, 8 J. SPACE L. 103 (1980). *See also* Doyle, *Remote Sensing by Satellite: Technical and Operational Implications for International Cooperation* in Matte & DeSaussure, *supra* note 1, at 8-9, for discussion of the benefits and problem solving capabilities of remote sensing.

[10] *See generally* Chapter 1 of UNISPACE 82 Report, U.N. Doc. A/Conf. 101/10] (1982)[hereinafter cited as UNISPACE 82].

[11] U.N. Doc. A/Conf./101/PC/L17/Add.III at 12 (1981).

[12] UNISPACE 82, *supra* note 10, at 4-5. Other applications of space technology have already shown how less-developed countries can "leap-frog" technology. For example, communications satellites such as those operated by INTELSAT have enabled countries with the most rudimentary internal communications systems largely to leap-frog the wire and microwave stages of communications development and use satellites and their associated ground stations for both international and domestic uses.

real benefits of remote sensing come not only from the making and launching of the satellites, or collecting and receiving data, and not even from the processing and analysis of data, but also from the practical use of the analyzed data.[13]

As might be expected, there are many legal obstacles to the successful operation of remote sensing systems on any scale. These obstacles stem from the compelling reality of remote sensing: it is now possible to observe vast areas of the globe, and the results of such sensing are often applicable to problems of either a regional or a global nature. The flip side of this reality is that many nations view key aspects of the remote sensing process as violative of their sovereignty.[14] This is not surprising in view of the developmental and technological inequality existing today between the developed and developing nations.[15]

The United Nations' active concern with remote sensing began with the 1969 U.N. Conference on Exploration and Peaceful Uses of Outer Space.[16] Since that time, the Committee on Peaceful Uses of Outer Space (COPUOS) has actively pursued the issues stemming from remote sensing by satellite.[17] COPUOS and its Legal Subcommittee, as well as its Scientific and Technical Subcommittee, have achieved significant progress in drafting and reaching consensus on several important principles for regulating remote sensing.[18] The one area where virtually no progress has been made is the right of a third party state, organization or individual to have access to data obtained by a state which has "sensed" a second state. This question concerning the right to disseminate data to third parties is so explosive that, in 1979, the Legal Subcommittee did not discuss it in order to avoid useless lengthy discussions.[19] This tension is due to strong and widely divergent views held by member nations as to whether, and under what circumstances, third parties should have access to such data.[20] The purpose of this Note is to explore these views and their impact on the third party access issue.

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[13] *Id.* at 2.

[14] *See* Joint Proposal of Argentina and Brazil on Draft; Basic Articles for a Treaty on Remote Sensing of Natural Resources by Means of Technology, U.N. Doc. A/C.1/1047] (1974)[hereinafter cited as Argentina-Brazil Proposal].

[15] *See* UNISPACE 82, *supra* note 10, at 3.

[16] J. KAY, THE LEGAL IMPLICATIONS OF REMOTE SENSING BY SATELLITE 47 (1981), prepared by Centre for Research of Air and Space Law, McGill University, for the Social Sciences and Humanities Research Council of Canada.

[17] Mossinghoff & Fuqua, *supra* note 9, at 113.

[18] *See* Text of Draft Principles on Remote Sensing, contained in Report of the Legal Subcommittee on the Work of its Twentieth Session, *in* U.N. Doc. A/AC.105/305] Annex I, app. § A (1982), and reproduced in the Appendix to this Note [hereinafter cited as COPUOS Draft Principles].

[19] Magdelénat, *supra* note 2, at 113.

[20] *Id.*

II. Views Regarding Third Party Access to Data

In order to appreciate the significance and implications of the third party access question, it is essential to understand the basic views advanced by member nations. These views may be broken down into three positions: A) the open acquisition and dissemination position; B) the consent regime requiring consent both to acquire data as well as disseminate it; and C) the consent regime requiring consent only to disseminate the data to third parties.

A. *Open Dissemination*

The open dissemination position advocates unrestricted dissemination of remotely sensed data collected over both the sensing state and second states to all interested parties, including states, organizations and individuals.[21] This position is espoused by the United States, and it is perhaps best delineated in the Working Paper submitted in February 1975 to COPUOS.[22]

Article V of the draft agreement proposed in the Working Paper provides that all states receiving data directly shall make it available to all interested parties.[23] The wording of this provision makes the open dissemination requirement applicable to states operating ground stations for the purpose of receiving data from remote sensing satellites, as well as the state actually operating the satellite. Article VI provides that states receiving data shall make it available to the sensed nation no later than it is made available to third parties.[24] This provision protects the interests of the sensed state.

The international consensus is that there is a need to distinguish between raw data obtained directly from the satellite (primary data), and the end product resulting from the analytical processes performed on that data (analyzed information).[25] The U.S. position, while favoring the dissemination of both primary data and analyzed information, is that analyzed information is the property of the analyzer, and that therefore the right of access to analyzed information cannot be equated with the right of access to primary data.[26]

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[21] Working Paper of the U.S., U.N. Doc. A/AC.105/C.2/L103 (1975).

[22] *Id.*

[23] *Id.* at Art. V.

[24] *Id.* at Art. VI. Article I emphasizes that remote sensing will be conducted in accord with international law, including various U.N. Treaties. Articles III, IV, VII and VIII emphasize the need for international cooperation in the acquisition and interpretation of data obtained through remote sensing.

[25] COPUOS Draft Principles, *supra* note 18 at Principle I. *See also* Christol, *Remote Sensing and International Law*, V Annals of Air & Space L. 375, at 419 (1980).

[26] J. Kay, *supra* note 16, at 17-18. The distinction is of indirect relevance to rights of

The United States is recognized as the most ardent advocate of the open dissemination policy.[27] The United States maintains that a policy of free collection and dissemination of primary data and analyzed information is not only in accord with international law, but is necessitated by the nondiscriminatory nature of the sensing equipment and its collection process.[28] Since the United States is presently the only state operating a functional civilian remote sensing system,[29] the U.S. policy is the current rule regarding third party access. The United States regularly supplies data to governments, organizations, businesses and individuals.[30]

Proponents of open dissemination find support in international custom and treaties, in particular the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space.[31] The Outer Space Treaty provides in Article I that "exploration and use of outer space . . . 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."[32] Article III of the Treaty provides that "States party to the treaty shall carry on activities in the exploration and use of outer space . . . in accordance with international law including the Charter of the United Nations, in the interest of maintaining international peace and security and promoting international cooperation and understanding."[33] Article XII provides:

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dissemination. Nations favoring a restrictive dissemination regime phrase their opposition to open dissemination in terms linking such dissemination to the threat of alleged information misuse. Thus no distinction is made between raw data and analyzed information for purposes of dissemination, the one being as objectionable as the other.

[27] The open dissemination policy, or "U.S. view" is supported by many other nations, particularly those that are more industrialized. *See* Swedish National Paper for UNISPACE 82, U.N. Doc.A/Conf.101/NP/9 (1981); J. KAY, *supra* note 16, at 125, citing J. RIKHOF, AN ALTERNATIVE REMOTE SENSING SATELLITE SYSTEM, L.L.M. Thesis submitted to the University of Nymgen, Netherlands, May 1979 (revised edition).

[28] Christol, *supra* note 25, at 395.

[29] SPACE POLICY, *supra* note 3, at 355. While it is a functioning world wide system, the U.S. considers Landsat to be experimental.

[30] SPACE POLICY, *supra* note 3, at 355.

[31] Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon, and Other Celestial Bodies, April 25, 1967, 18 U.S.T. 2410, T.I.A.S. No. 6347, 610 U.N.T.S. 2-5 [hereinafter cited as Outer Space Treaty]. While some have argued that Art. 19 of the U.N. Declaration of Human Rights shows that international law supports the right to seek, receive and impart information of all kinds and that therefore an international regime of free and open dissemination accords with international law, (see J. KAY, *supra* note 16, at 18-20; Robinson, *For a Worldwide Utilization and Dissemination of Data Acquired Through Remote Sensing*, in Matte & DeSaussure, *supra* note 1, at 113, 124) this argument is weak support for the open dissemination position of the U.S. point of view because the U.S. is not a party to the Human Rights Declaration. *See also* Ambrosetti, *supra* note 1, at 580.

[32] Outer Space Treaty, *supra* note 31, at Art. I.

[33] *Id.* at Art. III.

> To promote international cooperation in the peaceful exploration and use of outer space, States party to the treaty . . . agree to inform the Secretary-General of the United Nations as well as the public and international scientific community to the greatest extent feasible and practicable, of the nature, conduct, location and results of such activities.[34]

Proponents of open dissemination interpret the treaty, particularly Article XII, as encouraging nations to disseminate data.[35] Those states opposed to open dissemination argue that the Outer Space Treaty is inapplicable to remote sensing[36] which, though accomplished in outer space, is earth-oriented.[37] Proponents contend, however, that at the time of the Treaty's formulation, earth-oriented activities were plentiful and well known, and therefore the Treaty contemplated activities such as remote sensing.[38] The international community has accepted the proposition that the Outer Space Treaty governs the space segment of remote sensing,[39] which is the satellite's actual sensing activities occurring in space.[40] The core of the dispute is the ground segment,[41] which encompasses activities occurring on earth, including analysis and dissemination.

The U.S. delegation to COPUOS has argued that the free use principle contained in Article I of the Outer Space Treaty authorizes all remote sensing in the areas above the vertical limits of territorial sovereignty, subject only to the requirement that the contemplated use be peaceful in nature. Further, any requirement of prior consent for the acquisition of data by sensing is seen as conflicting with the free use principle.[42] The U.S. Working Paper omits, and thus impliedly rejects, the concept of permanent sovereignty insofar as it might be invoked to restrict access to data regarding the state's natural resources.[43] In essence, the United States rejects the views that call for consent by the sensed nation before

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[34] *Id.* at Art. XII.

[35] *See, e.g.*, J. KAY, *supra* note 16, at 33.

[36] *See infra*, at Sections B and C.

[37] *See* Diederiks-Verschoor, *Observation Remote Sensing Satellites* in Matte & De-Saussure, *supra* note 1, at 69-70.

[38] J. KAY, *supra* note 16, at 32.

[39] COPUOS Draft Principle III, *supra* note 18.

[40] Ambrosetti, *supra* note 1, at 569.

[41] Some authorities, such as Ambrosetti, *supra* note 1, at 569-70, divide the ground segment into "ground" and "user" segments, the user segment being the distribution of and final use of the information, and the ground segment being the reception and analysis of the raw data. This Note will use "ground segment" in reference to the combined ground and user segments.

[42] D. Smith, *International Law and Space Industrialization,* contained in Appendix D of 4 SPACE INDUSTRIALIZATION, at 273 (1978) (Report prepared under contract with the National Aeronautics and Space Administration by Rockwell International Corp., NASA-CR-150723) [hereinafter cited as SPACE INDUSTRIALIZATION].

[43] *Id.* at 275.

data may be either acquired[44] or disseminated.[45] The U.S. Working Paper stresses broad international participation in remote sensing activities of the space powers, including technical assistance and regional cooperation. The reasoning seems to be that the proposals rejecting open dissemination will only be defeated if the United States can demonstrate a strong likelihood of significant benefit for countries adhering to the open dissemination view.[46]

B. Prior Consent for Acquisition and Dissemination

In October, 1974, Argentina and Brazil introduced in COPUOS a joint proposal requiring the prior consent of the sensed state for both the acquisition and dissemination of data.[47] The Argentine-Brazilian position urges that remote sensing be based on the principle of sovereign equality of states. This principle embraces the legal rights inherent in sovereignty, including the economic freedom of a state to use and distribute its wealth and thereby exercise its legitimate and exclusive sovereign rights over its natural resources.[48] The proposal further provides that states shall refrain from remotely sensing resources belonging to other states without the sensed state's consent.[49] States which have consented to the remote sensing of their territories are entitled to participate in the sensing activities in a manner to be determined by specific arrangements between the parties concerned.[50] States which are the object of remote sensing activities are entitled to full unrestricted access to all data obtained through those activities.[51]

Articles IX and X of the Argentina-Brazil proposal contain the crucial provisions for the purpose of this discussion. Under the proposal, states obtaining information relating to the natural resources of another state may not divulge or transfer it in any manner to a third state, international organization or private entity, without the express authority of the sensed state. In addition, this information may not be used to the

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[44] For the view that the nation being sensed must give consent before the sensing is to occur, *see* Argentina-Brazil Proposal, *supra* note 14.

[45] For the view that the nation being sensed must give consent before data concerning its territory may be disseminated, *see* Working Paper of France and USSR on Draft Principles Governing Activities of States in the Field of Remote Sensing of Earth Resources by Means of Space Technology, U.N. Doc. A/AC.105/133] (June 1974), Annex IV, at 9-10; [hereinafter cited as France-USSR Proposal].

[46] SPACE INDUSTRIALIZATION, *supra* note 42, at 276. Indeed, benefits have already inured to other nations. *See generally* SPACE POLICY, *supra* note 3, at 55-56; Doyle, *supra* note 9.

[47] Argentina-Brazil Proposal, *supra* note 14.

[48] *Id.* at Article IV.

[49] *Id.* at Article V.

[50] *Id.* at Article VII.

[51] *Id.* at Article VIII.

detriment of the sensed state.[52] The corollary is that the sensed state will refrain from soliciting or accepting from third states, international organizations or private entities any information regarding the natural resources of another state obtained through remote sensing, without the express consent of the state owning the resources.[53]

This proposal, the converse of the U.S. open dissemination position, was originally supported by other Latin American members of COPUOS including Mexico, Venezuela and Chile.[54] The proposal represents the extreme consent-oriented position, as it requires consent for the mere acquisition of data by remote sensing. Under such a restrictive "second party" access regime, third party access without consent would be out of the question.

C. *Prior Consent for Dissemination*

Between the two positions discussed above lies the Joint Proposal of France and the USSR, submitted to COPUOS in June 1974.[55] This position is currently favored by members of the Soviet block[56] and many of the Third World nations.[57] In addition, it shares with the Argentina-Brazil Proposal the support of several other Third World nations, including Egypt, Chad, Iran, Mongolia and Nigeria.[58]

Principle I of the proposal states that "outer space shall be free for use by all States . . . in accordance with international law, including the United Nations Charter and the 1967 Outer Space Treaty, for carrying out remote sensing of earth resources for strictly peaceful purposes."[59] This provision reads much like Provision I of the U.S. Working Paper[60] and Principle III of the current COPUOS Draft Principles.[61] The key difference arises from the fact that the proponents of prior consent to dis-

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[52] *Id.* at Article IX.

[53] *Id.* at Article X.

[54] SPACE INDUSTRIALIZATION, *supra* note 42, at 267. As will be seen *infra*, these positions are subject to change.

[55] France-USSR Proposal, *supra* note 45.

[56] SPACE INDUSTRIALIZATION, *supra* note 42, at 270.

[57] *See generally,* Ambrosetti, *supra* note 1. Virtually all developing nations favor this position and this was emphasized at UNISPACE by the Proposal submitted by Mexico on behalf of the "Group of 77" (which now numbers 122), favoring a consent regime. *See* U.N. Doc. A/Conf.101/L.3 (Aug. 20, 1982). The "Group of 77" is a group of Developing Nations formed in the early 1960's to coordinate their position at UNCTAD, and which has become the main negotiating body for developing countries in the North-South dialogue. *See* UNISPACE 82: A CONTEXT FOR INTERNATIONAL COOPERATION AND COMPETITION. (Prepublication Draft) II-16-20 (1983)(available from the U.S. Congress, Office of Technology Assessment).

[58] SPACE INDUSTRIALIZATION, *supra* note 42, at 270.

[59] France-USSR Proposal, *supra* note 45, at Principle I.

[60] Working Paper of the U.S., *supra* note 21, at Art. I.

[61] COPUOS Draft Principle III, *supra* note 18.

seminate information, including France and the USSR, interpret the 1967 Outer Space Treaty as applying only to space-oriented activities occurring in outer space.[62]

Principle 2 of the France-USSR Working Paper states that:

> Such use shall, in particular, respect the principle of the sovereignty of States and especially the right of peoples and States to exercise permanent sovereignty over their wealth and resources as a basic element of their right to self-determination as well as their inalienable right to dispose of their natural resources and of information concerning those resources.[63]

This statement, one of the fundamental tenets of the prior consent policy, ties the undisputed "inalienable right of States to dispose of their natural resources"[64] to the right to dispose of information[65] concerning those resources. This latter right, violently disputed in COPUOS debates,[66] is significantly absent from the U.S. Working Paper.[67] Even the Argentina-Brazil Proposal does not extend the right to dispose of resources so far as to encompass information pertaining to those resources.[68]

Principle 4 of the France-USSR Working Paper provides that "[States exploring] natural resources by means of space technology which . . . [obtain] information on the natural resources of another State must transmit such information to the latter State on mutually acceptable terms."[69] The sensed state's right of access to information is thus recognized, as it is in Article VIII of the Argentina-Brazil Proposal,[70] Provision VI of the U.S. Working Paper[71] and COPUOS Draft Principle XII.[72]

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[62] J. KAY, *supra* note 16, at 86.

[63] France-USSR Proposal, *supra* note 45, at Principle II.

[64] *See, e.g.*, U.N. Declaration on the Establishment of a New Economic Order, G.A. Res. 3201, reprinted in 68 AM. J. INT'L L. 798 (1974).

[65] The France-USSR Proposal of 1974 was presented before the current data-analyzed information distinction now found in COPUOS Draft Principle I was agreed upon. *See supra* note 18. It was not until 1976 that the COPUOS Working Group sought to refine the data/information distinction. U.N. Doc. A/AC.105/171], Annex 3, at 4 (1976). Thus the term "information" in the Argentina-Brazil Proposal appears to include both "data" and analyzed "information" as the terms are used in COPUOS Draft Principle I.

[66] *See generally*, COPUOS Legal Subcommittee Reports from the past several years, including U.N. Doc. A/AC.105/305] (1982); U.N. Doc. A/AC.105/288] (1981); U.N. Doc. A/AC.105/271] (1980); U.N. Doc. A/AC.105/240] (1979); U.N. Doc. A/AC.105/218] (1978); [hereinafter cited as Legal Subcommittee Report for the appropriate year].

[67] SPACE INDUSTRIALIZATION, *supra* note 42, at 275.

[68] Argentina-Brazil Proposal, *supra* note 14, at Article IV.

[69] France-USSR Proposal, *supra* note 45, at Principle 4.

[70] Argentina-Brazil Proposal, *supra* note 14, at Article VIII.

[71] Working Paper of the U.S., *supra* note 21, at Art. VI.

[72] COPUOS Draft Principle XII, *supra* note 18, at 10. However, note that COPUOS Principle XII, while providing that the sensed state is entitled to primary data about itself,

Principle 5(b) of the France-USSR Proposal addresses the third party access issue directly, providing that states obtaining information regarding the resources of another state by remote sensing shall not make it public without:

> [t]he clearly expressed consent of the State to which the natural resources belong or use it in any other manner to the detriment of such State. Documentation resulting from remote sensing activities may not be communicated to third parties, whether Governments, international organizations or private persons, without the consent of the State whose territory is affected.[73]

This provision is comparable to Article IX of the Argentina-Brazil proposal,[74] but has no counterpart in the U.S. proposal. COPUOS Draft Principle XV contains a similar provision,[75] but it remains totally bracketed (indicating lack of agreement), and is one of the most hotly contested provisions of the COPUOS Draft.[76] It should be noted, however, that Principle 5(c) of the France-USSR proposal makes an exception to Principle 5(b) in the case of "information or natural disasters and phenomena which can be detrimental to the environment in general." This provision has no counterpart in the Argentina-Brazil Proposal, and is not required in the U.S. Working Paper because of the open dissemination policy. A principle similar to Principal 5(c) has been incorporated into COPUOS Draft Principle VIII, although the term "natural disaster" as used in the Draft Principle is "subject to further discussion."[77]

The France-USSR proposal, by requiring consent to disseminate data to third parties, has become the leading position paper of the nations favoring a consent regime.[78] Rather than requiring prior consent for acquisition of data, the proposal implements the concept of permanent sovereignty over natural resources by granting the sensed state the power to deny dissemination of data to third parties. Although the USSR favors a consent requirement for dissemination, it strongly opposes a prior consent requirement to sense because it plans to expand activities in the field of remote sensing, and does not want to be limited by restrictive treaty provisions or principles.[79] The USSR has even attempted privately to persuade the United States to accept the prior consent position in order

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remains in a state of flux regarding the applicability of this Principle to analyzed information.

[73] France-USSR Proposal, *supra* note 45, at Principle 5(b).

[74] Argentina-Brazil Proposal, *supra* note 14, at Article IX.

[75] COPUOS Draft Principles, *supra* note 18, at Article IX.

[76] Magdelénet, *supra* note 2, at 117.

[77] COPUOS Draft Principles, *supra* note 18, at 9.

[78] SPACE INDUSTRIALIZATION, *supra* note 42, at 270. *See supra* note 57.

[79] *Id.* at 272.

to ensure adoption of a regime that does not limit acquisition activities.[80]

Proponents of the France-USSR Proposal, while viewing the 1967 Outer Space Treaty as applicable only to the space segment of remote sensing activities, argue that the ground segment is governed by principles of territorial sovereignty which apply not only to a state's wealth and natural resources, but also to data concerning those resources.[81]

D. Summary of Views

In summary, the Open Dissemination position, espoused by the United States, gives all nations the freedom to acquire data by remote sensing without the consent of the sensed nation. Under this view, acquired data may be freely disseminated to any third party without consent of the sensed state; the only restriction is that data must be provided to the sensed state before it is provided to any third parties.

The Argentina-Brazil Proposal takes the view that prior consent of the sensed nation must be obtained both before the sensing is to occur, and before the data may be disseminated to any third parties. This approach emphasizes the impact of remote sensing on earth-based activities as well as the right of a state to exercise its sovereignty to protect earth-based resources and activities.[82]

The France-USSR Proposal, while not requiring consent in order to sense, retains the requirement of obtaining the sensed nation's consent before disseminating data to a third party. This position stresses permanent sovereignty over natural resources by stating that control over information regarding resources is every state's inalienable right.

Beyond the obligatory incantations on international assistance and cooperation, the only substantive principle shared by the three proposals is recognition of the right of a sensed state to receive data about itself from the sensing state.[83] This basic concept has been incorporated into COPUOS Draft Principle XII.[84]

The above discussion has highlighted the three major international views on remote sensing. The efforts of COPUOS to reach agreement on principles governing the third party access question will now be examined in light of these proposals.

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[80] *Id.*

[81] J. KAY, *supra* note 16, at 86. *See supra* note 64.

[82] Christol, *supra* note 25, at 393.

[83] Argentina-Brazil Proposal, *supra* note 14, at Art. VIII, France-USSR Proposal, *supra* note 45, at Principle 4, Working Paper of the U.S., *supra* note 21, at Art. VI.

[84] COPUOS Draft Principle, *supra* note 18, at 10.

III. Efforts of COPUOS to Resolve the Third Party Access Question

The Outer Space Committee has been generally successful in attempting to reach consensus on principles governing the use of remote sensing.[85] The Committee has been particularly successful with regard to the consensual principles, numbers II-X.[86] However, while the sensed state's right of access to data concerning itself has been incorporated into COPUOS Principle XII, there has been disagreement on whether the principle must be worded to provide that this right be agreed upon in each case between the sensing and sensed states.[87] The premise that all data collected over a state must be made available to it is supported by the Report of the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space.[88]

In recent years, the Argentina-Brazil Proposal has not been strongly supported in COPUOS debates,[89] at least to the extent that it requires consent for the acquisition of data. Many states are unconcerned or feel that the latter issue is academic;[90] recent Working Papers submitted by Latin American nations, particularly Mexico and Colombia, imply the acceptance of a basic right to sense other nations without consent.[91] It has also been pointed out that a requirement of prior consent by the sensed state before data may be acquired is both politically unrealistic[92] and unenforceable.[93] Also to be considered are the practical problems and vastly increased expenses that would be incurred were such a requirement to

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[85] *See generally* 1981 Legal Subcommittee Report, *supra* note 66, at Annex I.

[86] J. Kay, *supra* note 16, at 86. COPUOS Draft Principles II through X deal with international cooperation generally, the application of the 1967 Outer Space Treaty and the U.N. Charter, the sharing of benefits and information pertaining to natural disasters and the environment, the desirability of notifying the U.N. Secretary General of remote sensing programs and the sharing of technological information. The brackets indicating disagreement have been removed from these Principles with the exception of several instances where consensus has not been reached on the choice of "shall" or "should." *See* COPUOS Draft Principles, *supra* note 18, at Principles II, III, IV, V, VI, VII, IX.

[87] *See, e.g.*, USSR Working Papers WG/RS (1982)/WP.7-10, China Working Paper WG/RS (1982)/WP.12, contained in 1982 Legal Subcommittee Report, *supra* note 66, Annex I, at 19-20.

[88] UNISPACE 82, *supra* note 10, at 43.

[89] Discussion of a consent requirement for acquisition has been noticeably absent from recent Legal Subcommittee Reports.

[90] *See* National Academy of Sciences, Resource Sensing from Space: Prospects for Developing Countries 146 (1977) [hereinafter cited as Resource Sensing].

[91] *See, e.g.*, Mexico Working Paper WG/RS (1981)/WP.2, Colombia Working Paper WG/RS (1981)/WP.1, contained in 1981 Legal Subcommittee Report, *supra* note 66, at 12-16.

[92] Ambrosetti, *supra* note 1, at 575.

[93] Bordunov, *Legal Problems of Use the Data of Remote Sensing,* [sic] *reprinted in* Proceedings of the XIX Colloquium on the Law of Outer Space, at 241.

exist.[94] Thus, as regards the third party access question, the two currently viable views are the Open Dissemination Position represented by the U.S. Working Paper, and the Prior Consent (for dissemination) Position, represented by the France-USSR Proposal.

In dealing with the third party access question, COPUOS has concentrated on Draft Principles XIV, XV and XVI.[95] These Principles currently contain numerous brackets indicating lack of consensus. There has been little progress toward consensus since these Principles were introduced.[96]

Principle XIV, which requires consultation between the sensed and sensing states at the request of the sensed state, has been the subject of minimal discussion in recent years. Some delegations have felt that the ideas contained in Principle XIV are similar to those of Principle IV, and therefore that the former could be deleted, or at least that its language could be streamlined.[97] Other delegations feel it is premature to decide upon the language of Principle XIV until Principle XV has been agreed upon.[98] Principle XIV was not discussed at the Legal Subcommittee's Twenty-first session in 1982.[99]

Principle XV is at the heart of the third party access issue. Principle XV first appeared in 1978 as Principle XIV.[100] Other than having its designation changed to XV in 1979,[101] there has been no change in the wording of the Principle.[102] As presently worded, Principle XV adopts the stance of the France-USSR Proposal, requiring the consent of the sensed state before data or information derived from remote sensing may be disseminated to a third party. However, the entire Principle remains in brackets.[103] Discussion of the Principle by the Legal Subcommittee has brought out the diametrically opposed views of those states favoring open dissemination and those favoring a consent requirement.[104] Those supporting free dissemination have relied on the concept of freedom of exploration and use of outer space as set out in the 1967 Outer Space

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[94] SPACE INDUSTRIALIZATION, *supra* note 42, at 293.

[95] *See, e.g.*, 1981 Legal Subcommittee Report, *supra* note 66, Annex I, at 3-5.

[96] Compare the current wording of COPUOS Draft Principles XIV, XV, XVI, *supra* note 18, at 7-11, with the wording of the Principles contained in the 1978 Legal Subcommittee Report, *supra* note 66, Annex III, at 5-8. Note that at that time, what is now XVI was XIII, what is now XV was XVI, and what is now XIV was XV.

[97] 1981 Legal Subcommittee Report, *supra* note 66, Annex I, at 3-4.

[98] *Id.*

[99] 1982 Legal Subcommittee Report, *supra* note 66, Annex I, at 5.

[100] 1978 Legal Subcommittee Report, *supra* note 66, Annex III, at 8.

[101] 1979 Legal Subcommittee Report, *supra* note 66, Annex I, at 11.

[102] 1982 Legal Subcommittee Report, *supra* note 66, Annex I, at 11.

[103] *Id.* at 5.

[104] J. KAY, *supra* note 16, at 85.

Treaty.[105] Article XI of the Outer Space Treaty requires states to inform the U.N. Secretary General, the public and the international scientific community, of the nature and results of outer space activities conducted.[106] In addition, proponents of open dissemination have argued that restrictions will impair the development of remote sensing programs.[107] Those states opposed to open dissemination respond with the argument that the 1967 Treaty applies only to the space segment, and that information pertaining to those resources obtained from the ground segment should be governed by principles of territorial sovereignty applicable to a state's wealth and resources, as discussed above.[108]

At the 1980 session, proponents of open dissemination pointed out that, absent provisions restricting sensing itself, the sensing states will have data pertaining to the sensed states regardless of any restrictions on dissemination to third parties, and that, in addition, mandatory restrictions on dissemination would result in administrative, financial and technical burdens on the development of remote sensing programs.[109] On the other hand, proponents of a consent regime countered with the argument that certain types of data could be used to the detriment of the sensed state.[110] Many of the states favoring a consent regime have voiced support for a Soviet proposal originally introduced in 1979.[111] This proposal uses spatial resolution as the criteria for classification of data.[112] The proposal suggests that sensed states can declare that dissemination of data pertaining to their natural resources having a spatial resolution of less than 50 meters shall require the consent of the sensed state. The proposal encompasses analyzed information based on data with a resolution of less than 50 meters as well.[113] While the Soviets justified this proposal on grounds that dissemination of data with a resolution finer than 50 meters could be detrimental to both the economic and defense interests of the sensed state, the real Soviet concern lies primarily with the latter consid-

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[105] *Id.* at 86.

[106] *Id.*

[107] 1982 Legal Subcommittee Report, *supra* note 66, Annex I, at 5.

[108] COPUOS Draft Principles, *supra* note 18, at 9.

[109] 1980 Legal Subcommittee Report, *supra* note 66.

[110] *Id.*

[111] USSR Working Paper WG III (1979)/WP.1/Rev.1, contained in 1979 Legal Subcommittee Report, *supra* note 66, Annex I, at 12-13, Annex IV, at 1.

[112] 1979 Legal Subcommittee Report, *supra* note 66, Annex I, at 12-13, Annex II, at 1. Spatial resolution, as defined by the USSR, is the smallest size of an object that can still be seen on a photograph. Thus, under the proposed standard limiting resolution to 50m, data containing visible objects of under 50m would require the consent of the sensed state before dissemination could occur. *See* 1978 Scientific and Technical Subcommittee Report U.N. Doc. A/AC.105/216], at 7.

[113] *See supra* note 110.

eration and the potential for dissemination of military secrets.[114] The Soviet proposal offers potential for compromise. If states allow the free dissemination of data with a resolution of greater than 50 meters, it may provide a basis for reaching consensus. However, the proponents of open dissemination feel that notwithstanding their objection in principle to such a regime, spatial resolution would not provide a reliable standard of reference for the classification of data because of the difficulty of establishing the actual resolution in each instance.[115] Some open dissemination proponents argue that there are no objective, scientific or technical reasons for classifying primary data in some rigid fashion into categories which would be subjected to different dissemination rules, and that adding the criteria of spatial resolution to the consent regime proposal would compound the practical problems with such a regime.[116]

At the 1981 session, proponents of open dissemination argued that Principle XV should be excluded, reiterating the claims that open dissemination is in the best interest of all states, and that the Soviet spatial resolution proposal would be an unreliable standard for classification.[117] Those states favoring a consent regime voiced their continued support for the Soviet spatial resolution standard as an objective standard.[118] Some delegations favored a consent requirement for the dissemination of data that could harm the sensed state, specifically data regarding harvests and crop yield, but agreed that data beneficial to all should be freely disseminated.[119] Proponents of open dissemination countered that an open dissemination regime was superior even with regard to data pertaining to crop yield, because attempts to conceal such data could be used to manipulate markets unfairly. Open dissemination proponents further argued that under a consent regime some states will have more data than others, giving them an advantage over states not in possession of the data.[120] Some delegations believed that since only a few states presently have access to remote sensing data, or are in a position to analyze it themselves, those without access (particularly lesser-developed countries) would be at a clear disadvantage if data pertaining to their natural resources was freely disseminated.[121] These delegations indicated that in the future, with a greater number of states participating, unrestricted dissemination

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[114] *See generally* 1979, 1981, 1982 Legal Subcommittee Reports, *supra* note 66.

[115] 1980 Legal Subcommittee Report, *supra* note 66.

[116] *Id.*

[117] 1981 Legal Subcommittee Report, *supra* note 66, Annex I, at 4.

[118] *Id.*

[119] *Id.* at 12. Colombia Working Paper WG/RS (1981)/WP.1 [hereinafter cited as Colombian Proposal].

[120] Colombian Proposal, *supra* note 119.

[121] 1981 Legal Subcommittee Report, *supra* note 66, Annex I, at 5.

could become a possibility.[122]

Dissatisfied with the Soviet spatial resolution proposal and the language of Principle XV, the Colombian delegation introduced a new proposal[123] to modify the existing Principles I and XV. Under the Colombian proposal, data on the earth and its natural phenomena are termed macroscopic remote sensing, and their dissemination may not be restricted, "inasmuch as the international community benefits from it."[124] Similar information with much greater resolution, collected by airborne platforms or other aeronautical or ballistic devices operating at any altitude "up to the point at which outer space commences" is termed microscopic remote sensing, and such data would require the sensed state's consent for dissemination.[125] Thus, under the Colombian proposal for Principle XV, no state or entity carrying out remote sensing, or which analyzes data, could on any account "communicate to third parties information on specific natural resources or agricultural crops in any other state" without obtaining the prior consent of the sensed state.[126]

The delegations favoring open dissemination found the Colombian Proposal unacceptable. Other delegations, while favoring the thrust of the proposal, felt that the introduction of new concepts such as "agricultural crops" would create difficulties in application of Principle XV.[127] Due to the lack of consensus, the language of Principle XV was left unchanged.[128] The Colombian Proposal is nevertheless a step forward in the resolution of the third party access question simply because it addresses, more directly than prior proposals, the real reason for much of the world's opposition to open dissemination, i.e., fear of exploitation through dissemination of data pertaining to matters over which the sensed state has no control.[129]

At the 1982 session, the proponents of open dissemination asserted that open dissemination comported with international law, and that restrictions were impractical and would interfere with the development of remote sensing programs. Some of these delegations pointed out that there have been no actual claims of damage arising from dissemination, that it is beneficial to all states, and that restrictions would discourage international cooperation and participation in remote sensing programs. They were also concerned that restrictions on dissemination would put sensing states at an increasing advantage, enabling them to have or ac-

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[122] *Id.*

[123] Colombian Proposal, *supra* note 119.

[124] *Id.* at Principle I, provision 1.

[125] *Id.* at provision 2.

[126] *Id.* at Principle XV.

[127] 1981 Legal Subcommittee Report, *supra* note 66, Annex I, at 5.

[128] *Id.*

[129] *See infra* section D.

quire data relating to all states. In addition, some delegations held the view that wide dissemination of data and analyzed information is acceptable only if the correlative obligation is established for sensing states to provide, on a non-discriminatory basis, data and analyzed information to all those requesting it.[130]

Advocates of a consent requirement reaffirmed views expressed at previous sessions, stating that certain restrictions on dissemination were necessary to protect the national interests of sensed states. Some delegations felt that dissemination without the prior approval of the sensed state violated the sovereignty of that state. Others felt that while wide dissemination was desirable, a sensing state should be held responsible for the dissemination of any primary data or analyzed information that might adversely affect the national interests of a sensed state.[131] The Soviet Union reintroduced its proposal based on spatial resolution as a means of classification,[132] and once again the proposal received the support of many states favoring a consent regime. Some delegations, while admitting that only the wide dissemination of primary data and analyzed information could contribute to the development of states, considered it essential that dissemination in certain instances be subject to the prior approval of the sensed state. These states felt that an objective criterion such as the degree of resolution should make it possible to distinguish between that data which could be freely disseminated, and that which requires prior consent. According to these delegations, any solution must take into account existing technical realities, the importance and expansion of international cooperation in this field and the "legitimate aspiration of sensed States to control the dissemination of certain data to third parties."[133]

The discussion of Principle XVI, which requires that remote sensing be conducted with respect for the full and permanent sovereignty of all states and peoples over their own wealth and natural resources, has centered on whether the concept of sovereignty should be extended to information pertaining to natural resources.[134] The current wording of the Principle, while not defining sovereignty as encompassing such information, nevertheless provides that remote sensing be conducted with "due regard to the rights and interests of other States and their natural and juridical persons . . . as well as their inalienable right to dispose of their

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[130] 1982 Legal Subcommittee Report, *supra* note 66, Annex I, at 5.

[131] *Id.*

[132] USSR Working Paper WG/RS (1982)/WP.4 contained in 1982 Legal Subcommittee Report, *supra* note 66, Annex I, at 18.

[133] 1982 Legal Subcommittee Report, *supra* note 66, Annex I, at 6.

[134] *See, e.g.*, 1981 Legal Subcommittee Report, *supra* note 66, Annex I, at 5.

natural resources, and of information concerning those resources."[135] Since its introduction in 1978,[136] this principle has been the subject of hot debate. Some delegations have been of the opinion that Principle XVI is a natural complement to Principles XII and XV,[137] while others have favored its deletion on the grounds that its meaning is not clear, and that the concept of permanent sovereignty over natural resources had been discussed in various other fora without reaching consensus.[138] In addition, there has been ongoing disagreement as to the necessity of the reference to "natural and juridical persons."[139] Recently, some delegations have asserted that the principle of freedom of use of outer space must be linked with the concept of state sovereignty over natural resources.[140] Other states, favoring open dissemination have agreed that permanent sovereignty extends to a states' wealth and natural resources, but have reaffirmed that such sovereignty does not extend to information about wealth and natural resources, and that consensus on Principle XVI was not possible, and that it should therefore be deleted. Some delegations have stated that the concept of Principle XVI might be placed in the framework of a preamble to the principles since consensus on its substance seems unlikely.[141] Thus progress on Principle XVI has been negligible even when compared to Principle XV.

A. Evaluation of COPUOS and the Legal Subcommittee

COPUOS has been concerned with remote sensing since 1968.[142] The Working Group on remote sensing of COPUOS' Legal Subcommittee has been attempting to draft principles on remote sensing since 1975.[143] While some consensus has been reached in other areas, the critical issues of third party access and extension of sovereignty have not come much closer to resolution, despite the efforts of COPUOS. While this discussion has gone on, there has been phenomenal progress in the areas of satellite technology and data processing capabilities.[144] Lesser-developed nations are clamoring for inclusion in the exploitation of high technology. By the end of this decade, there are likely to be at least six operational remote

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[135] COPUOS Draft Principles, *supra* note 18.

[136] Introduced as COPUOS Draft Principle XIII; *see* 1978 Legal Subcommittee Report, *supra* note 66, Annex III, at 8.

[137] 1981 Legal Subcommittee Report, *supra* note 66, Annex I, at 5.

[138] *Id.*

[139] *Id.*

[140] *Id.* at 6.

[141] *Id.*

[142] J. KAY, *supra* note 16, at 49.

[143] Mossinghoff & Fuqua, *supra* note 9, at 108.

[144] UNISPACE 82, *supra* note 10, at 23-26.

sensing systems in use.[145] The high technology nations are pushing technological horizons outward at an increasing pace. For example, the French SPOT system, expected to be operational in 1984, will have a multi-spectral (color) resolution of 20 meters, and panchromatic (black and white) resolution of 10 meters,[146] as contrasted with a multi-spectral resolution of 80 meters, and a resolution of 30 meters for the black and white system used presently in the U.S. Landsat system.[147] Clearly, it is essential that the development of a regulatory regime for remote sensing keep up with both the growth of technology and the realities of world politics, particularly in response to the concerns of the lesser-developed nations. The issues will not resolve themselves, and based on the past attempts, it is questionable whether COPUOS can keep up with the technological and political advances occurring in this decade as it strives to develop consensus on principles governing remote sensing.

B. Economic and Political Realities

Although the lesser-developed nations appreciate the enormous potential of remote sensing,[148] they view the resulting data as best kept away from third parties (barring consent to disseminate).[149] Some nations favoring prior consent for dissemination cite national legislation defining certain categories of resource information as privileged governmental matter.[150] Others favor prior consent because they consider images of their natural resources tantamount to strategic information.[151]

The primary fear of the lesser-developed nations, virtually all of whom favor restrictions on dissemination,[152] is exploitation. Specifically, they fear large international monopolies acquiring primary data and analyzed information, and using it for purposes of prognosis in different branches of the world economy, thus determining the most profitable fields of capital investment, and dictating their own conditions for natural resource development.[153] While it is argued that since remote sensing encompasses only data gathering and that access to and control of resources can still be restricted by domestic legislation, lesser-developed nations reject this argument because it does not take into account the value

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[145] *Id.* at 24. The Landsat System is still considered to be experimental rather than operational.

[146] AVIATION WEEK & SPACE TECHNOLOGY, Jan. 11, 1982, at 98.

[147] SPACE POLICY, *supra* note 3, at 189.

[148] *See, e.g.*, SPACE POLICY, *supra* note 3, at 5861.

[149] *See supra* note 27.

[150] RESOURCE SENSING, *supra* note 90, at 146.

[151] *Id.*

[152] J. KAY, *supra* note 16, at 125.

[153] Bordunov, *supra* note 93, at 242.

of the data and information itself in the hands of sophisticated government and non-government entities in developed countries. Such data and information would put those entities in a much superior bargaining position.[154] A similar concern is also reflected in the support for proposals of the USSR to restrict dissemination based on a criterion of resolution. In the view of some, the proposals of the USSR are designed to restrict the usefulness of western remote sensing systems, as well as to limit the dissemination of potentially damaging information about the USSR and her allies.[155] Further, lesser-developed nations feel that the free access idea is against their interests because it does not take into account the lesser-developed nations' lack of the technology necessary to analyze the raw data.[156] As a result, many lesser-developed countries fear that the internationalization of data about their countries would result from open dissemination or from the use of regional data banks.[157] These countries view the makeup and condition of their natural resources to be private national matters for security and economic reasons.[158]

It would seem that history dictates this position of the lesser-developed countries. This fear of internationalization and a desire for "privacy" regarding natural resources should not be unexpected since many of the nations favoring a consent regime[159] have been colonized, exploited and manipulated by the developed nations for many years.[160] These countries are now being forced to consider a proposed international regime based on their former exploiters' interpretations of international law which dictate particular rules governing dissemination. This international law is often based upon the custom and usage of a time when few of the lesser-developed nations even existed and, if they had existed, they would have lacked the economic and technological development necessary for meaningful input into the creation of such custom and usage. These nations are being asked to follow international law in which they had little or no input in creating. It should therefore come as no surprise that the lesser-developed nations want to fashion new rules, such as stretching the concept of sovereignty to encompass information about their resources;

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[154] Ambrosetti, *supra* note 1, at 578.

[155] SPACE POLICY, *supra* note 3, at 206-07. An example of this fear of dissemination of damaging information would be the use of agricultural data concerning crop failures by foreign firms in order to place themselves in a better bargaining position when dealing with the sensed state. This fear of exploitation, combined with its paranoia regarding strategic information (which is already undoubtedly recorded by "spy satellites" not subject to the COPUOS Proposals) is a likely explanation for the position of the USSR.

[156] Ambrosetti, *supra* note 1, at 579.

[157] J. KAY, *supra* note 16, at 93.

[158] Christol, *supra* note 25, at 394.

[159] *See* J. KAY, *supra* note 16, at 125, n.237.

[160] *See* Ambrosetti, *supra* note 1, at 583-84.

nor should it surprise anyone that many nations believe that open dissemination invites exploitation.[161] These fears can only be enhanced by the Reagan Administration's recent proposal to have the U.S. Landsat system turned over to non-governmental entities for private commercial exploitation.[162]

The developing countries thus find themselves in a political and legal dilemma: While they feel compelled to protect themselves by endorsing restrictions on dissemination, they also stand to profit enormously from unfettered remote sensing and the data it yields.[163] It is clear, however, that the developing countries lack the facilities to conduct their own operations in the near future,[164] and are thus forced to rely on those states with present remote sensing capabilities. The real question seems to be who will be the primary beneficiaries of the growth and development certain to result from the future application of remote sensing-the -developing countries, which desire the technology, or those countries already in a position to exploit advanced technologies such as remote sensing. If the latter monopolize remote sensing technology and regulation, despite the generally recognized need for international cooperation in these areas,[165] they will have little incentive to share their technology and information, and the developing countries' opportunity to benefit meaningfully from remote sensing will be lessened considerably. Furthermore, the Third World's perception of the more developed nations as greedy and exploitive will be reinforced, and the chasm between the two groups will be widened.

It can be argued that an open dissemination policy would counteract this self-centered image and fears of exploitation held by the lesser-developed nations. However, discussion in the Legal Subcommittee in recent

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[161] The concern of developing nations regarding exploitation of their natural resources by others, as well as their desire to have greatly increased input in the creation of international law is emphasized in such documents as The United Nations General Assembly Declaration on the Establishment of a New International Economic Order, G.A. Res. 3021, *reprinted* in 68 AM. J. INT'L L. 798 (1974); Third Conference of Non-Aligned Countries, Lusaka Declaration on Peace, Independence, Co-operation, and Democratisation of International Relations, U.N. Note Verbale NV/209 of November 12, 1970, *reprinted in* 10 Int'l Leg. Materials 215.

[162] *See* UNISPACE 82 Brazil Position Paper, U.N. Doc. A/Conf./101/NP/43 (1981). *See also* note 184, *infra.*

[163] Ambrosetti, *supra* note 1, at 579.

[164] The developed countries of the world have 95% of the world's research and development capacity for science and technology, while the lesser developed countries, with 70% of the world's population, have only 5% of the research and development capacity. *See* U.N. Doc. A/Conf./101/PC/L.17.

[165] *See, e.g.*, COPUOS Draft Principles II, IV, VI, VII, at Annex I, 7-8 of 1981 Legal Subcommittee Report, *supra* note 66; Articles IX, X, XI of 1967 Outer Space Treaty, *supra* note 31.

years suggests otherwise, and the Third World remains fearful of open dissemination.

The inability of the world community to reach a workable consensus on the third party access issue has significant implications for the future of a regime for remote sensing. Resolution of the issue would pave the way for consensus on the remaining Principles. Therefore, it is imperative that the issue be resolved as quickly as possible. As long as the two opposing viewpoints remain blind to reality, resolution seems unlikely.

The open dissemination viewpoint is unrealistic because it fails to address the lesser-developed countries' fears of exploitation. Proponents of open dissemination argue that a state may protect itself simply by enacting domestic legislation limiting access to resources.[166] This response does not take into account problems resulting from dissemination of primary data or analyzed information which pertains to internal matters that are beyond control of the sovereign state, whether by domestic legislation, or any other means. As a rule, this data and information has been unavailable to third parties until the advent of remote sensing.[167] In a similar vein, proponents of a consent regime seem to ignore the fact that by virtue of its sovereignty, a state has absolute and total control over access to natural resources located within its boundaries.[168]

It can be seen, then, that the arguments advanced by both sides on

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[166] Ambrosetti, *supra* note 1, at 581.

[167] Thus, while a state may be able to keep foreign entities from coming in without consent and removing such resources as minerals, either through domestic regulation and legislation or through more drastic means such as expropriation of foreign entities already operating within the sensed state, the same state has no comparable control over the fact that it has suffered a major crop failure in a given year. An open dissemination policy would enable the extent of the crop failure to be disseminated throughout the world, and there seems to be legitimate basis for fear that foreign merchants would use this information to the disadvantage of the sensed state, using the data as a means to speculate in international markets.

[168] *See* J. KAY, *supra* note 16, at 5. Kay argues that since information pertaining to natural resources is not an element of the exercise of a state's permanent sovereignty over natural resources as defined in the various U.N. resolutions addressing the subject, the exercise of sovereign rights to use and disposal of these resources cannot be understood to mean that international economic competition is no longer legally valid. Kay states that to say sovereign states must not use the economic tools at their disposal to maximize the benefits obtainable through world trade denies, rather than affirms a state's sovereign rights to use and dispose of natural resources. J. KAY, *supra* note 16, at 13-16. Whatever foundation this argument may have in classical international law, it is clear that the lesser developed countries are not interested in buying the more developed nations' version of classical international law in its entirety. In light of their fears of the economic damage capable of being visited upon them, it would seem very unlikely that the third world nations would abide by the proposition advanced by Kay favoring an open dissemination regime, regardless of its foundations. In the search for a solution to the third party access question, it would seem essential to focus on the realities of the present, rather than on traditional international legal theory having little or no relevance to the needs and concerns of developing countries.

the problem of exploitation prove too much. Nonetheless, viewing the issue from this perspective lays the groundwork for a potential solution.

IV. Toward a Solution

A deadlock clearly remains in the COPUOS debate on the third party access question.[169] Certainly, there have been attempts at compromise. Notable among these are the Soviet proposal utilizing resolution as the classification criterion and the Colombian proposal barring dissemination of data and information pertaining to "agricultural crops" without consent. However, these proposals have not moved the Legal Subcommittee any closer to consensus.

While the legal deadlock continues, there has been progress in the technological realm. Although the U.S. Landsat system is experimental,[170] the French SPOT is close to being operational.[171] Already, concern has been voiced about the possibility that the French SPOT System's high resolution may provide users with too much information,[172] and agreements restricting dissemination of SPOT data may be necessary to prevent opposition from a number of states.[173] While Spotimage, the joint government-industry organization set up to market SPOT services, has announced its willingness to abide by international regulations regarding data dissemination,[174] the fact that such agreements may be required emphasizes the need for achieving international consensus on the question of dissemination as quickly as possible.[175] In addition to technological advances, new legal questions are being created as well.[176] It is thus imperative that the third party access question be resolved.

Several stumbling blocks remain in the way of consensus. They stem

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[169] An examination of any of the Legal Subcommittee Reports, *supra* note 66, will verify this.

[170] Leigh, *United States Policy of Collecting and Disseminating Remote Sensing Data*, in Matte & DeSaussure, *supra* note 1, at 148.

[171] *See, e.g., supra* note 145, and accompanying text.

[172] Space Policy, *supra* note 3, at 190.

[173] *Id.*

[174] *Id.*

[175] Chaos would become inevitable if a special set of agreements were needed to be reached each time a new operational remote sensing system was put into use. Since there are expected to be at least six operational remote sensing systems in operation by the end of the decade, this underscores the need for consensus on the third party access question. *See* UNISPACE 82 Report, *supra* note 10, at 24.

[176] For example, when the French Spot system becomes operational (*see supra* note 146), another state which possesses a receiving station and receives data pertaining to its neighbor becomes a third party within the meaning of COPUOS Draft Principle XV and the respective provisions of the Argentina/Brazil and France/USSR Proposals. *See* Hosenball, *Free Acquisition and Dissemination of Data through Remote Sensing*, in Matte & DeSaussure, *supra* note 1, at 111.

primarily from the unrealistic premises in the arguments advanced by the proponents of the two viewpoints previously discussed.

A. *Stumbling Blocks—Open Dissemination View*

The open dissemination view espoused by the United States can trace its roots back to basic democratic ideals of freedom[177] which were extended into the realm of space activities by the National Aeronautics and Space Act of 1958[178] and the United States' interpretation of the 1967 Outer Space Treaty.[179] This is all well and good from the United States' point of view, but not from the perspective of the lesser-developed countries. It is easy for the latter to conceive of this view as a convenient justification for the United States to expand its technological leadership, while generating substantial economic and political benefits and keeping other nations dependent on U.S. data, as well as subject to U.S. views regarding the use and dissemination of that data. There is no doubt that the United States desires to continue reaping the benefits of its advanced technology.[180] In addition, it is obvious that if the United States retains a measure of control over the allocation of earth resource data services, it will be able to use such control as a means of advancing other foreign policy interests.[181]

The same reasoning applies to foreign trade as well. The United States and other highly developed countries are interested in expanding exports, and by promoting the international sale of data receiving and processing equipment for earth resources sensing, the balance of payments for the exporters will improve.[182] In addition, the U.S. Government probably also intends to use remote sensing as a tool to develop previously underdeveloped food and mineral resources in order to increase the supply and decrease the price of world raw materials. This would encourage other states to use revenues from their increased volume of exports to increase their imports, particularly from the United States.[183]

With this attitude looming in the background, the lesser-developed countries' fears of exploitation do not seem so unrealistic. These fears of exploitation and abuse are only buttressed by the plans of highly devel-

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[177] *See* Galloway, *Remote Sensing from Outer Space: Legal Implications of Worldwide Utilization and Dissemination of Data*, in Matte & DeSaussure, *supra* note 1, at 97.

[178] 42 U.S.C. § 2451 (1976).

[179] *See supra* note 35 and accompanying text.

[180] SPACE INDUSTRIALIZATION, *supra* note 42, at 300.

[181] *Id.* at 301. This would seem to hold true even if Landsat is commercialized. Communications Satellite Corporation (COMSAT) is one of the leading candidates to take over Landsat, and since its inception has worked closely with the U.S. government. COMSAT, it should be noted, is a government-created corporation.

[182] SPACE INDUSTRIALIZATION, *supra* note 42, at 299.

[183] *Id.*

oped countries such as the United States and France for the commercialization of remote sensing operations.[184] In addition, commercialization plans trigger another fear of the lesser-developed countries: concern for the continued availability of data.[185] There is no assurance that Landsat operations will be continued on a medium or long term basis,[186] with or without commercialization. Thus, assuming that the U.S. remote sensing program remains intact in one form or another, an open dissemination policy, coupled with plans for commercialization, raises the spectre of a world data and analyzed information regime controlled by profit-oriented corporations whose goals may be inimical to the goals of many lesser-developed countries.[187]

In response to these fears of exploitation, states may control physical access to resources through domestic legislation.[188] However, as was earlier discussed, this view ignores the fact that some disseminated data may pertain to matters which, though within the sensed states' jurisdiction, cannot be controlled through domestic legislation.

B. Stumbling Blocks—Consent View

There are counter-arguments to the justifications advanced in support of a consent requirement. As previously discussed, many fears of the lesser-developed countries concerning economic exploitation are rendered moot by domestic legislation regulating access to natural resources. It is also true that to date, no nation has actually shown harm resulting from the dissemination of sensing data to a third party.[189] In addition, it has been powerfully argued that the prior consent regime for dissemination has no basis in classical international law,[190] and that by extending sovereignty to encompass information about resources, sensing nations are being denied the use of economic tools at their disposal, thus infringing on the sensing state's sovereignty.[191]

However, no amount of legal reasoning will excuse hundreds of years

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[184] *See, e.g.*, Brazilian Position Paper, UNISPACE 82, *supra* note 162. The United States has adopted a policy favoring commercialization of the Landsat program as soon as is reasonably practicable. *See* SPACE POLICY, *supra* note 3, at 222. The Reagan Administration has recently announced its intention to sell the Landsat system to the private sector. See THE WASHINGTON POST, March 8, 1983, at A1.

[185] UNISPACE 82, *supra* note 10, at 51. There is concern that since NASA policy is unilateral, it is subject to unilateral alteration. *See* SPACE INDUSTRIALIZATION, *supra* note 42, at 297.

[186] SPACE INDUSTRIALIZATION, *supra* note 42, at 297.

[187] *See* Ambrosetti, *supra* note 1, at 578.

[188] *Id.* at 581.

[189] Hosenball, *supra* note 176, at 111.

[190] *See generally* J. KAY, *supra* note 16, at 1-22.

[191] *Id.* at 16.

of exploitation of lesser-developed countries. Political realities and differing views must be taken into account, even if they seem unrealistic or exaggerated. The economic danger of information concerning a poor food crop in one nation being disseminated throughout the world to other nations in a position to benefit economically from the impending shortage is very real to the nation being sensed. Controlling these consequences is a burden which sensed nations have never before had to face. In addition, while it is arguable that the attempt of some proponents of a consent regime to extend principles of sovereignty to encompass data and information about natural resources as well as the resources themselves is an attempt to enforce domestic law extraterritorially, it can also be argued that the open dissemination policy is a blatant attempt to enforce the First Amendment of the U.S. Constitution extraterritorially.[192] Whether a state can require consent before information affecting it can be broadcast into it or disseminated about it is an issue applicable to both remote sensing and Direct Broadcast Satellites and is a very real concern for many lesser-developed countries as well as the Communist bloc,[193] (one that is not likely to be overcome by relying on classical international legal theory).

V. CONCLUSION

At present, by operating the world's only functioning remote sensing system, the United States controls its application and technology. Under U.S. policy any citizen, as well as any other nation, has access to virtually all U.S. data collected world-wide.[194] Even if the U.S. Government does

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[192] There is a great deal of concern among third world nations regarding U.S. attempts to enforce the First Amendment extraterritorially. Just recently, the United Nations voted to require the consent of the receiving nation before another nation operates a direct broadcast satellite system that broadcasts into the receiving state. Despite the fact that such a requirement, like the consent requirement proposed for dissemination of remotely-sensed data, may not have a firm foundation in classical international law, a majority of member nations have approved the requirement. The result of this adoption will probably impact upon the COPUOS discussions on remote sensing. One delegate was quoted after the UN vote as saying: "We're not here to negotiate the credo of the U.S. — we're here to deal with the interests of 157 States." N.Y. Times, Nov. 23, 1982.

[193] SPACE POLICY, *supra* note 3, at 354. Obviously, remotely sensed data is not as much of a danger in terms of propaganda as are Direct Broadcast Satellites, because the material is not directly transmitted to the individual citizens of a nation, and also because the data and information itself is of questionable value as political propaganda. Nonetheless, it is significant that the DBS spillover debate, involving the same principle of prior consent before information may be transmitted, has been the subject of long drawn-out debate, and seems to be leading to adoption of a prior consent requirement despite continuous U.S. opposition. *See supra* note 192 and accompanying text.

[194] SPACE INDUSTRIALIZATION, *supra* note 42, at 294; *see generally*, Robinson, *For a Worldwide Utilization and Dissemination of Data Acquired Through Remote Sensing*, in

not provide it to other nations directly, U.S. citizens may disseminate it anywhere. The United States must be prepared to modify this policy. To resolve the third party access issue and to enable genuine large scale international cooperation and its concurrent benefits, such as sharing of costs and technology, the United States must be willing to accept present political and economic reality. The United States must be prepared to adjust its admirably principled position to reflect, at least in part, the views of the rest of the world; particularly the views of the lesser-developed nations. This is most certainly true if the United States expects the rest of the world to share in the costs of perfecting and applying remote sensing technology.

The solution[195] to the third party access question should be sought in a compromise of the current positions. The right to disseminate data should depend upon whether a sensed state has the ability to control the consequences resulting from dissemination of the data to third parties. Thus, data pertaining to natural resources could be freely disseminatable since the sensed state, through domestic legislation or other means, could control physical access to the resources. Data pertaining to matters over which the sensed state cannot control the consequences resulting from dissemination, such as the hypothetical bad wheat crop, could be disseminated only with the consent of the sensed nation. This approach should enable the world to reach consensus on the third party access issue, and by resolving that issue, pave the way for consensus regarding the remaining Principles concerning remote sensing. This solution, by making use of elements contained in the opposing viewpoints, should prove satisfactory since it allays fears of exploitation while at the same time it minimizes restrictions on dissemination. While this proposal would not permit open dissemination of all data, it would allow for the dissemination of a great deal of data. To the extent that consent would be required, it could be in areas where there are realistic and legitimate reasons for concern. This is the basis for a sound, realistic and workable compromise.

Unlike the Soviet resolution-based criterion, this compromise would not be rendered unworkable or obsolete by changes in technology.[196] Ad-

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Matte & DeSaussure, *supra* note 1, at 113-124.

[195] While it might be possible through the use of international trade, negotiation, foreign aid and other non-aggressive sanctions to convince an individual state to consent to third party dissemination of data pertaining to it, such a solution does not dispose of the legal issues underlying the problem.

[196] It is submitted that the proposal for a dissemination standard based upon spatial resolution, *supra* note 112, if adopted, would stifle technological and economic development as a result of limiting the "useful resolution" of international remote sensing operations. The solution proposed in this Note would enable the benefits of future advancements in sensing and data processing to be incorporated into remote sensing programs as quickly as they can develop.

mittedly, working out a regulatory regime to implement this proposal is bound to be time-consuming. However, if COPUOS started to work now on such a scheme, perhaps using the Colombian proposal[197] as a starting point, it would certainly reach consensus long before the current debate finds any acceptable solution.

Although the discussions of the proposal will take time, the United States could advance the process by voluntarily modifying its open dissemination position. This action should pave the way for conciliation and cooperation in the implementation of remote sensing systems in a more timely fashion than if the current devisive debate continues. If indeed it is true that world opinion is starting to swing in favor of open dissemination,[198] any current proposal may ultimately be subsumed by a regime based on open dissemination. In the meantime, the regulatory regime will have at least been keeping pace with the technological development and the implementation of new, operational remote sensing systems, a situation otherwise unlikely to occur given the current rate of progress on the proposals now before the Legal Subcommittee. The mere fact that the United States would be willing to move from its absolute open dissemination position would show the rest of the world U.S. willingness to take into account other nations' concerns and would help allay fears of exploitation. This would open the door to the increased international cooperation and assistance that all nations profess to be desirable.[199] In conjunction with the solution of the third party access question, this approach could lay the foundation for an international remote sensing regime.[200] An international regime, in turn would reduce Third World

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[197] W/G/RS (1981) WP.1, contained in 1981 Legal Subcommittee Report, *supra* note 66.

[198] *See generally* Note, *In Search of a Legal Framework for the Remote Sensing of the Earth from Outer Space*, 4 B. C. J. INT'L & COMP. L. 453 (1981).

[199] *See generally* COPUOS Draft Principles, *supra* note 18; 1967 Outer Space Treaty, *supra* note 31; UNISPACE 82 Report, *supra* note 10.

[200] Because of the transnational nature of remote sensing, there is no way that an international remote sensing regime can become operational until the third party access question is resolved. Once agreement is reached, any one of a range of proposed regimes could be implemented. Several practical considerations, including a concern for continuity of data, compatibility of systems, unnecessary duplication, and international cooperation and technical assistance point toward an international regime handling both the ground and space segments.

As regards the space segment, cost and unnecessary duplication render national systems impractical, and thus discussion has centered upon models in which the space segment is operated cooperatively, either on a regional or worldwide basis.

Discussion of models for the ground segment has centered upon the following options: (1) national stations, comparable to the existing pattern of relationships based upon bilateral agreements that the United States, as owner of the space segment, has with countries wishing to establish national receiving stations; (2) regional stations serving several nations; and, (3) an international system consisting of either a specialized agency coordinating proce-

concerns relating to continued data availability at reasonable prices and compatibility of ground segment equipment.[201] The policy of free dissemination would be retained to the extent that it is compatible with the concerns of developing nations, while providing all nations with basic information pertaining to natural resources and the environment. As a result, the impediments to an international operational remote sensing system would be reduced, and the entire planet would stand ready to benefit from the incredible potential of remote sensing.

Since it is the moving force behind the open dissemination viewpoint, the United States would similarly be in a unique position to spearhead the drive toward compromise, minimizing opposition from the other proponents of open dissemination and enhancing the potential for consensus. The United States need not continue its policy of open dissemination if those who are intended to benefit from the policy do not want it.[202] The United States gains little from doing so, because instead of demonstrating the benefits of remote sensing, a forced open dissemination policy will

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dures, formats and dissemination, or a network of receiving stations and distribution stations managed by an international body. Such an international organization could be within or without the framework of the United Nations.

Regional stations have the advantage over national stations of sharing cost and encouraging cooperation, as well as giving participating nations a voice in deciding the extent and nature of the program. Regional stations have been advocated by many (*see, e.g.*, J. KAY, *supra* note 16; Ambrosetti, *supra* note 1). In addition, it has been pointed out that regional centers may be less sensitive to the factionalism that frequently arises in international bodies.

There has been much discussion of an international organization operating a ground system under the auspices of the United Nations (*see generally* U.N. Doc. A/AC 105/1/8 Ch. IV (1973)) as well as discussion of an international body not necessarily under the umbrella of the United Nations, modeled after INTELSAT. Such an international system, presumably also operating the space segment, has the potential of offering efficient, uniform worldwide coverage with the greatest opportunity for international cooperation. The United States would, of course, have to sacrifice its present open dissemination policy for such an organization to be viable, but the basic concern of the United States that there be open access via satellite systems to collect data would remain unimpeded.

Any one of these systems could be compatible with the solution proposed in this Note. For discussion of a workable model of an international remote sensing organization modeled after INTELSAT, *see* the discussion in SPACE POLICY, *supra* note 3, at 298-300. The model discussed therein uses a criterion based upon spatial resolution, but the dissemination standard proposed in this Note could be substituted easily without the inherent drawbacks of the spatial resolution standard.

[201] UNISPACE 82, *supra* note 10, at 51, 67-68. While there is no guarantee of continued data availability from an international regime, it would seem that such a regime, with broad user and national support would have a greater commitment to continuity than would a single U.S. supplier, be it a commercial or governmental entity. *See* SPACE POLICY, *supra* note 3, at 300.

[202] *See, e.g.*, luncheon remarks of A.W. Frutkin at Earth Resources Survey Symposium, Houston, Texas, June 11, 1975, *cited in* Robinson, *supra* note 194, at 122.

simply be viewed by Third World nations as a violation of their sovereignty. Thus, abandoning absolute open dissemination is the first step in actually reaching consensus on the third party access question.

The second step in solving the question is the adoption of a dissemination criterion based on the sensed state's ability to control the consequences resulting from dissemination to third parties. Once consensus exists, all that remains is to formulate a workable construction of that standard. At first glance, this seems nearly impossible, since getting the members of COPUOS to agree on a single specific standard would entail many more years of prolonged debate. However, once a general consensus exists, there is no need for unanimity on a specific standard. The "specifics" of what types of data may be disseminated could be negotiated between the sensing entities, (states, corporations or international consortia),[203] and the sensed states in a series of bilateral agreements. This process would allow for the negotiation of a standard within the limits of the general consensus discussed above for each individual nation. This would give the sensed states some measure of control over the data obtained over their sovereign territory. In addition, this plan is not overly dependent on international custom or domination by the developed countries, and hence should not be objectionable on those grounds. In effect, it would elevate developing nations to a relatively better bargaining position vis-à-vis the developed nations. The agreements could be subject to review and amendment at predetermined intervals to adapt to changing political, economic and technological realities.

This proposal for achieving resolution of the question of third party access should be effective; it removes the fallacious elements of the opposing arguments and focuses upon the realistic concerns expressed by those on different sides of the issue embodied in those arguments. Resolution of the third party access issue should be greatly hastened. Once this issue is resolved, general international agreement regarding the Draft Principles on Remote Sensing presently under consideration by COPUOS should be accomplished with minimal delay.[204] The foundation will have been laid for a regime that will enable the application and regulation of operational remote sensing systems to keep up with technological, political and economic development. The resulting benefits from this "new information process"[205] will inure to all nations of this planet as well as to the planet itself.

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[203] *See supra* note 200; model discussed in SPACE POLICY, *supra* note 3, at 298-300.

[204] For discussion of the importance of the dissemination issue, *see* J. KAY, *supra* note 16.

[205] Ambrosetti, *supra* note 1.

APPENDIX*

TEXTS OF DRAFT PRINCIPLES AS CONTAINED IN THE REPORT OF THE LEGAL SUBCOMMITTEE ON THE WORK OF ITS TWENTIETH SESSION (A/AC. 105/288], ANNEX I, APPENDIX)

Principle I[1]

For the purpose of these principles with respect to remote sensing of the natural resources of the earth and its environment:[2]

(a) The term "remote sensing of the earth" means "remote sensing of the natural resources of the earth and its environment".[3]

(b) The term "primary data" means those primary data which are acquired by satellite-borne remote sensors and transmitted from a satellite either by telemetry in the form of electromagnetic signals or physically in any form such as photographic film or magnetic tape, as well as preprocessed products derived from those data which may be used for later analysis.

(c) The term "analysed information"[4] means the end-product resulting from the analytical process performed on the primary data as defined in paragraph (b) above combined with data and/or knowledge obtained from sources other than satellite-borne remote sensors.

Principle II

Remote sensing of the earth from outer space and international cooperation in that field [shall] [should] be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and taking into consideration, in international cooperation, the particular needs of the developing countries.

Principle III

Remote sensing of the earth from outer space [shall] [should] be con-

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* [Author's Note: The numbering of the footnotes has been altered slightly from how they appeared in the original in order to conform to the style of this publication. The content and substance remain unchanged.]

[1] The question of the application of these principles to international intergovernmental organizations will be considered later.

[2] The formulation "with respect to remote sensing of the natural resources of the earth and its environment" will be reviewed in light of the title to be given to the principles.

[3] This term is still subject to further discussion. In the view of some delegations, it would be necessary in the future work to further define the meaning of the words "remote sensing of the earth and its environment".

[4] The content, definition and necessity of the term "analysed information" is still to be clarified.

ducted in accordance with international law, including the Charter of the United Nations and the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, and the relevant instruments of ITU.

Principle IV

1. States carrying out programmes for remote sensing of the earth from outer space [should] [shall] promote international co-operation in these programmes. To this end, sensing States [should] [shall] make available to other States opportunities for participation in these programmes. Such participation should be based in each case on equitable and mutually acceptable terms due regard being paid to principles.

2. In order to maximize the availability of benefits from such remote sensing data, States are encouraged to consider agreements for the establishment of shared regional facilities.

Principle V

Remote sensing of the earth from outer space [should] [shall] promote the protection of the natural environment of the earth. To this end States participating in remote sensing [should] [shall] identify and make available information useful for prevention of phenomena detrimental to the natural environment of the earth.

Principle VI

States participating in remote sensing of the earth from outer space [should] [shall] make available technical assistance to other interested States on mutually agreed terms.

Principle VII

1. The United Nations and the relevant agencies within the United Nations system should promote international co-operation, including technical assistance, and play a role of co-ordination in the area of remote sensing of the earth.

2. States conducting activities in the field of remote sensing of the earth [shall] [should] notify the Secretary-General thereof, in compliance with article XI of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.

Principle VIII

Remote sensing of the earth from outer space should promote the protection of mankind from natural disaster.[5] To this end, States which have identified primary data from remote sensing of the earth and/or analysed information in their possession which would be useful in helping to alert States to impending natural disasters, or in assisting States to deal with natural disasters should, as promptly as possible, notify those States affected or likely to be affected of the existence and availability of such data and/or information. Such data and/or information should, upon request, be disseminated as promptly as possible.

Principle IX[6]

Taking into account the principles II and III above, remote sensing data or information derived therefrom [shall] [should] be used by States in a manner compatible with the legitimate rights and interests of other States.[7]

Principle X

States participating in remote sensing of the earth either directly or through relevant international organization [shall] [should] be prepared to make available to the United Nations and other interested States, particularly the developing countries, upon their request, any relevant technical information involving possible operational systems which they are free to disclose.

Principle XI

[States [shall] [should] bear international responsibility for [national] activities of remote sensing of the earth [irrespective of whether] [where] such activities are carried out by governmental [or non-governmental] entities, and [shall] [should] [guarantee that such activities will] comply with the provisions of these principles.]

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[5] The meaning of this term is subject to further discussion.

[6] Should be considered in connexion with the formulation of a principle on dissemination of data or information and subject to later discussion of the terms "information" and "data."

[7] Some delegations were of the view that, for the sake of consistency it was necessary to consider this principle in the light of draft principle II and III.

A delegation reserved its position on removing the square brackets around the words "in a manner compatible with" and on the deletion of the words "not" and "to the detriment of."

Principle XII

A sensed State [shall] [should] have timely and non-discriminating access to primary data obtained by remote sensing of the earth from outer space, concerning its territory, on [agreed] reasonable terms and [no later than] [before] access is granted to any third State.[8] [To the greatest extent feasible and practicable, this principle shall also apply to analysed information.]

Principle XIII

[A State [intending to conduct] [conducting] remote sensing activities of the earth from outer space shall notify the Secretary-General of the United Nations and [upon request] the States whose territory is intended to be covered by such activities [to the fullest extent feasible and as soon as practicable] of the intended launch, [nature of the] mission, duration and coverage of such activities. The Secretary-General shall publish information thus received.]

Principle XIV

[A State carrying out remote sensing of the earth [shall] [should] without delay consult with a State whose territory is sensed upon request of the latter in regard to such activity, [in particular dissemination of data and information,] in order to promote international co-operation, friendly relations among States and to enhance the mutual benefits to be derived from this activity.]

Principle XV

[States carrying out remote sensing of the earth shall not, without the approval of the States whose territories are affected by these activities, disseminate or dispose of any data or information on the natural resources of these States to third States, international organizations, public or private entities.]

Principle XVI

[Without prejudice to the principle of the freedom of exploration and use of outer space, as set forth in Article I of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, remote sensing of

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[8] The question of from which States access to and provision of data should be obtained needs further consideration, subject to review in the light of the discussion on access by third States.

the earth [should] [shall] be conducted with respect for the principle of full and permanent sovereignty of all States and peoples over their own wealth and natural resources [with due regard to the rights and interests of other States and their natural and juridical persons in accordance with international law] [as well as their inalienable right to dispose of their natural resources] [and of information concerning those resources].]

Principle XVII

[Any dispute that may arise with respect to the application of [Activities covered by] these principles [shall] [should] be resolved by prompt consultations among the parties to the dispute. Where a mutually acceptable solution cannot be found by such consultations it [shall] [should] be sought through other [established] [existing] procedures for the peaceful means of settlement of disputes mutually agreed upon by the parties concerned.][9]

[9] Subject to review in the light of the full set of agreed principles and a decision on the legal nature of the principles.