

UNITED NATIONS PRINCIPLES ON REMOTE SENSING:
REPORT ON DEVELOPMENTS, 1970-1980

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Introduction

There is a growing awareness among the nations of the world that we are only beginning to appreciate fully the scope of the benefits which will flow from mankind's conquest of space. In science and technology, and in exploration and earth applications, the impressive down-to-earth results of national and international space programs assure that activities in space will soon become an integral and routine part of our daily lives.

The global benefits of our space programs are no more clearly defined than in the field of remote sensing from space. At a time when world supplies of food, water and energy are dwindling, and natural disasters and man-made hazards threaten our environment, the ability to acquire data about our planet from the vantage point of space is contributing to world efforts to manage our precious resources. For more than two decades, successive generations of remote sensing satellites have increased our ability to learn more about our planet. By equipping satellites with devices that sense the Earth's surface in different frequency ranges—including spectral bands not visible to the human eye, *e.g.*, ultraviolet and infrared—scientists obtain data that can practically be gathered in no other way.

The inherently worldwide nature of remote sensing is underscored by increasing international activity. During 1980, Landsat ground stations, owned and operated by the host countries in Argentina, Australia, Brazil, Canada, India, Italy, Japan and Sweden, will receive data from NASA's Landsat satellites and further distribute the data to national and international users. France, Japan, India and the European Space Agency are now developing their own remote sensing satellite systems; when operational, they will complement those of the U.S. and U.S.S.R.

In recognition of the critical importance of remote sensing from space, and in appreciation of the international character of such programs, the United Nations Committee on the Peaceful Uses of Outer Space ("COPUOS") has for several years undertaken a detailed consideration of legal implications of remote sensing of the Earth from space, with the goal of formulating and agreeing upon principles. It is the purpose of this paper to trace the development of those principles and, through the appendices, to publish in one place various texts of the principles that have been proposed over the years. The latest text of the principles, as documented in the report of the Legal

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Subcommittee of the COPUOS on the work of its 1980 session,¹ is set forth in Appendix I. With respect to this and all other texts of U.N. documents quoted in the appendices, square brackets are used to set off words, phrases or clauses on which no agreement or consensus has been reached. It should also be understood that before a formal consensus is reached on any principle, it is subject to a final reading in the COPUOS; no principle has been involved in such a procedure.

Working Group on Remote Sensing of the Earth by Satellite, 1971-1974

The first reference to remote sensing in the United Nations General Assembly was in December of 1969, when the COPUOS was requested to study possible international cooperation in this field.² This task was assigned to the Scientific and Technical Subcommittee ("S & T Subcommittee") of the COPUOS,³ and consideration of the development and use of this technology was begun at the Subcommittee's April 1970 meeting. At that meeting, the S & T Subcommittee had before it several documents which it reviewed and recommended to the parent COPUOS. These included:

Model of plans for a developing country to establish participation in an operational earth resource survey satellite system within the decade,⁴

Note by the Secretariat on the applicability of space and other remote sensing techniques to the management of food resources,⁵

Use of remote sensing in the earth-orbital space for the discovery, inventory, evaluation, development and conservation of earth's natural resources,⁶

Report of the Secretary-General to the Economic and Social Council on natural resources satellites.⁷

Based on the work of the S & T Subcommittee, the General Assembly on 16 December 1970 adopted a resolution welcoming the efforts of the COPUOS "to promote such practical applications of space technology as earth resources surveying" and requested the S & T Subcommittee to undertake efforts preparatory to the

¹U.N. Doc. A/AC. 105/271 (10 April 1980), Annex II, pp. 7-11. All citations in this paper are to the English text.

²U.N. G.A. Res. 2600 (XXIV) (16 December 1969).

³U.N. Doc. A/AC. 105/PV. 84, p. 3.

⁴U.N. Doc. A/AC. 105/C.1/CRP.2.

⁵U.N. Doc. A/AC. 105/C.1/CRP. 5.

⁶Report prepared by the U.N. Outer Space Affairs Division in 1967 and submitted as Background Information Paper No. 13 to the Conference on the Exploration and Peaceful Uses of Outer Space.

⁷U.N. Doc. E/4779.

convening of "a working group on earth resources surveying with special reference to satellites."⁸ At its July 1971 meeting, the S & T Subcommittee decided to establish and convene a "Working Group on Remote Sensing of the Earth by Satellites,"⁹ and the first meeting of the Working Group was held, as recommended by the Subcommittee, in connection with the September 1971 meeting of the full COPUOS. Acting on a draft resolution submitted by the twenty member states of the Working Group,¹⁰ the General Assembly in December 1971 endorsed the efforts of the Working Group and called upon member states to "submit information on their national and cooperative efforts" in remote sensing, requested the Working Group to solicit the views of appropriate U.N. bodies, and requested the Secretary-General to submit comments and working papers to the Working Group.¹¹

The next session of the Working Group was held in May 1972.¹² Recognizing the need for more information, it requested the Secretary-General to assess the available resources and documents and to prepare a background paper to be used by the Working Group at its next meeting. This background paper was to include a summary of the views and comments submitted in response to the 1971 General Assembly resolution. A task force was formed to assist the Secretary-General in preparing this paper, which was completed in time for the January 1973 session of the Working Group.¹³

At that session, the Working Group for the first time discussed at length the question of the legal implications of remote sensing of the earth by satellite.¹⁴ It noted that the opinions of member states "ranged from the desirability of requesting studies on a wide array of legal subjects to suggestions that the study of scientific and technical aspects and organizational alternatives should for the time being have priority."¹⁵ The Working Group further noted that the "delegation of the USSR formulated a preliminary draft of legal principles to be applied by States utilizing space technology in exploring the resources of the earth."¹⁶ Those principles, which were not discussed by the Working Group, are set forth in Appendix II. Since the question of the legal

⁸U.N. G.A. Res. 2733 (XXV) (16 December 1970).

⁹U.N. Doc. A/AC. 105/95 (19 July 1971).

¹⁰U.N. Doc. A/C. 1/L. 571 (5 November 1971).

¹¹U.N. G.A. Res. 2778 (XXVI) (8 December 1971).

¹²U.N. Doc. A/AC. 105/C. 1/L. 49/Add. 1 (9 May 1972).

¹³U.N. Doc. A/AC. 105/C. 1/WG. 4/CRP. 7 (6 December 1972).

¹⁴U.N. Doc. A/AC. 105/111 (14 February 1973).

¹⁵*Id.*, p. 11.

¹⁶*Id.*, pp. 11 and 12.

implications of earth resources surveys was now on the agenda of the Legal Subcommittee of the COPUOS, which was to convene in March 1973, the Working Group requested the views of the Legal Subcommittee on the general topic of remote sensing, but did not reach any conclusions on specific questions to be put to the Legal Subcommittee.

Role of the Legal Subcommittee, 1973-1980

The Soviet draft principles were also submitted to the Legal Subcommittee at its 1973 meeting, and reprinted as an annex to its report,¹⁷ but because of lack of time the Subcommittee was unable to consider the agenda item on "Matters relating to the activities carried out through remote sensing satellite surveys of earth resources."¹⁸ In response to the report of the Legal Subcommittee the full COPUOS at its 1973 session specifically "requested the Legal Subcommittee thereafter to devote part of its next session to responding to the request of the Working Group . . . for its views on the legal implications of remote sensing satellites."¹⁹

In a parallel effort, the COPUOS Secretariat had undertaken, in response to the 1971 General Assembly resolution²⁰ and a request of the COPUOS, to conduct a detailed survey of potential users of remote sensing from space based on a questionnaire prepared by the S & T Subcommittee at its 1973 session. Responses were received from 28 member states, and the report of the Secretariat documented the deep and wide ranging interest in the new capability of remote sensing.²¹ The Canadian response, in addition to addressing in detail the technical, organizational and legal aspects of remote sensing, submitted "possible options" illustrating rights and obligations during the three separate phases of remote sensing. The Canadian "options," which effectively anticipated the range of issues that were to become central to subsequent considerations of remote sensing principles, are set forth in Appendix III.

¹⁷U.N. Doc. A/AC. 105/115 (27 April 1973), Annex III, p. 7. See also U.N. Doc. A/AC. 105/111 (14 February 1973), para. 48. Minor differences in phraseology are assumed to be the result of differences in translations.

¹⁸*Id.*, p. 14.

¹⁹U.N. Doc. A/9020 (1973), p. 5.

²⁰*Id.*, at 11.

²¹U.N. Doc. A/AC. 105/C. 1/WG. 4/L. 6 and Add. 1-10 (28 November 1975). The results of an earlier survey conducted by the Secretariat are set forth in U.N. Doc. A/AC. 105/C.1/Wg. 4/CRP. 2 and Add. 1-6. A synopsis of the replies prepared by the COPUOS Secretariat appears in U.N. Doc. A/AC. 105/C. 1/WG. 4/L. 11 (21 February 1974).

The responses from several states gave impetus to the efforts then underway to address in detail the legal implications of remote sensing. As summarized by the Secretariat in its synopsis of the responses:

Eight States (*Argentina, Belgium, Brazil, Canada, France, Mexico, Norway and Sweden*) felt that there is no specific international legal regime to govern remote sensing of the earth by satellites. In their view, existing principles were of a general character as well as being inadequate. The majority of them felt that the principles presently applicable could be derived from the Outer Space Treaty or the general principles of International Law. One of them (*Canada*) felt that there is no automaticity in the application of international law to this new activity while six of them (*Argentina, Brazil, Canada, France, Mexico and Sweden*) stated that the search for new laws was necessary because though remote sensing takes place in outer space, its effects are terrestrial and affect sovereign interests of States.

With specific reference to the Outer Space Treaty, one State (*United States*) stated that it considered the principles embodied therein applicable to remote sensing; another State (*Sweden*) stated that it believed that the Treaty is not intended to cover an activity which has as its object the earth and its resources.

Among the reasons given for the need for the elaboration of principles in this field were: lack of an international regime to govern the activity or the inadequacy of existing international law to cover the area, the limited application of the Outer Space Treaty to matters directed from earth to space (*Argentina and Sweden*); the contradiction between the absolute freedom of observation of the earth from space and the spirit of the Outer Space Treaty and international law (*Mexico*); the application of the principle of scientific freedom for research activities and space exploration is limited to the activities directed from earth to space or between different celestial bodies (*Argentina*); concern of States that they might be commercially exploited, their privacy invaded, sovereignty compromised or security weakened (*Canada and Sweden*); information received from space crossed the boundaries of various States (*Greece*); need to give adequate protection to sensed States (*Norway and Singapore*).

Four States (*Belgium, Canada, Japan and Sweden*) felt that the need or the desirability of elaborating new principles in this field will depend on the arrangements reached in the organizational field for operating systems. Two of them (*Belgium and Sweden*) considered that organizational arrangements should be devised to take care of the concerns of States and such arrangements are generally more efficient than legal regulations of such activity.²²

In its final report of 13 March 1974,²³ the original Working Group on Remote Sensing analyzed the capabilities and potential of remote sensing from technical, operational and economic viewpoints, but concluded that its report could not be exhaustive because remote sensing was "still in a dynamic state of development."²⁴ With regard to the legal implications of remote sensing, the Working Group noted that

²²Synopsis of replies, *id.*, pp. 7 and 8.

²³U.N. Doc. A/AC. 105/125 (13 March 1974).

²⁴*Id.*, p. 26.

the Legal Subcommittee had that question on its agenda, and that five delegations—USSR, Canada, Argentina, Brazil and France—had submitted documented proposals or options on the legal aspects of remote sensing. The USSR and Canadian proposals have already been mentioned.²⁵ The proposals of Argentina,²⁶ Brazil,²⁷ and France²⁸ are reproduced in Appendices IV, V and VI, respectively. A joint proposal of France and USSR,²⁹ also submitted to the Legal Subcommittee, is set forth in Appendix VII.

From this point forward, successive General Assembly resolutions have reinforced the predominate role of the Legal Subcommittee in the drafting of and exchange of views on remote sensing principles.³⁰ Since 1975, the Legal Subcommittee has included "Legal implications of remote sensing of the earth from space" as a priority item on its agenda; and since 1976, the formulation of draft principles has been a specific goal of the Subcommittee's work.

At its 1975 session, the Legal Subcommittee allocated one week to the agenda item on remote sensing, and established a new Working Group of the Subcommittee (hereinafter referred to as "WG"), open to all members of the Subcommittee. A joint proposal of Argentina and Brazil,³¹ co-sponsored by Chile, Mexico and Venezuela, on basic draft articles for a treaty on remote sensing, replaced the earlier separate proposals of Argentina (Appendix IV) and Brazil (Appendix V). The draft treaty proposed jointly by Argentina and Brazil is reproduced in Appendix VIII. A working paper by the United States on the development of additional guidelines on remote sensing of the natural environment of the earth from outer space³² was submitted to the Subcommittee and considered by the WG. The U.S. working paper appears in Appendix IX.

Pending the actual drafting of legal principles on remote sensing, the WG focused on what had become the three major proposals: those submitted by (1) France/USSR, (2) Argentina/Brazil and (3) United States. The WG noted that "there were certain

²⁵See text accompanying footnotes 17 and 21.

²⁶U.N. Doc. A/AC. 105/133 (6 June 1974), Annex IV, pp. 1-3.

²⁷*Id.*, at 3-5.

²⁸*Id.*, at 5 and 6.

²⁹*Id.*, at 9 and 10.

³⁰U.N. G.A. Res. 3182 (XXVIII) (8 December 1973); U.N. G.A. Res. 3234 (XXIX) (12 November 1974); U.N. G.A. Res. 3388 (XXX) (18 November 1975); U.N. G.A. Res. 31/8 (8 November 1976); U.N. G.A. Res. 32/196 (20 December 1977); U.N. G.A. Res. 33/16 (17 November 1978); and U.N. G.A. Res. 34/66 (5 December 1979).

³¹U.N. Doc. A/C. 1/1047 (October 1974).

³²U.N. Doc. A/AC. 105/C. 2/L. 103 (February 1975); Press Release USUN 10 (75) (19 February 1975).

common elements to be found in the three drafts and the views expressed by many members in several areas," which it identified as follows:

- (a) that remote sensing activities by means of space technology should be conducted for the benefit and in the interest of all mankind; this new technology would be of particular significance to developing countries in their plans and programmes for national development;
- (b) that remote sensing activities by means of space technology should be conducted in accordance with international law including the United Nations Charter and the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies;
- (c) that the maximum benefits to all countries could be obtained by international co-operation at all levels, particularly on a regional basis;
- (d) that States undertaking programmes for remote sensing activities by means of space technology should encourage international participation
- (e) that in remote sensing activities by means of space technology measures should be taken to promote efforts for the protection of the natural environment of the earth.³³

In addition to these areas of agreement, the WG identified the following as being "among the main questions raised and considered" by the WG:

whether a future international instrument on remote sensing should deal with remote sensing of the natural resources of the earth or with the whole natural environment of the earth; whether sovereign rights of States over their natural resources apply also to information on those resources; whether consent of the sensed State should be required and, if so, whether the consent should be applied to all or only certain remote sensing activities; whether the question of consent should not be considered within the broader context of international co-operation and participation; whether a distinction should be made between the question of access to information on resources within national jurisdiction and on resources outside national jurisdiction; whether the access by the sensed States, the sensing State and third parties respectively to information or data should be unlimited or subject to certain conditions and, in the event of the latter, whether it might be possible to draw on analogies with the existing domestic practice of some States whereby they protect the confidentiality of certain kinds of information concerning their natural resources, and formulate similar guidelines in regard to data collected by means of remote sensing on an international level; whether there should be parallel consideration of the legal and organizational aspects of remote sensing; whether certain organizational and technical solutions might not help resolve some legal problems.³⁴

During the 1976 meeting of the Legal Subcommittee, the WG formulated five draft principles based primarily on the five common elements it had identified the previous year, together with a sixth common element that:

³³U.N. Doc. A/AC. 105/147 (11 March 1975), Annex III, p. 2.

³⁴*Id.* at 2 and 3.

States participating in remote sensing programs should make available technical assistance in that area to other interested States on mutually agreed terms.³⁵

The five draft principles formulated by the WG in 1976 are reproduced in Appendix X. In addition to the draft principles, the WG identified the following three new common elements:

- (a) The United Nations and other relevant international organizations could play a useful role in the area of remote sensing, especially as far as co-ordination of activities and co-operation between States, including technical assistance, are concerned.
- (b) States participating in remote sensing which obtained information indicating an impending natural disaster should make this available as soon as possible to all States likely to be affected and to concerned international organizations.
- (c) Remote sensing data or information derived therefrom should not intentionally be used by States to the detriment of other States.³⁶

Also at its 1976 session, the WG addressed for the first time the terms which would be key to an understanding and application of whatever principles might ultimately be agreed to, including "data," "information," "the natural resources of the Earth," and "the natural environment of the Earth."³⁷ In turn this led the S & T Subcommittee, at its 1977 session, to adopt "for the purposes of discussion and analysis the following structure for describing in an orderly manner the system elements and data flow involved in remote sensing from satellites currently being operated:

1. Data acquisition (satellites and command stations)
2. Data reception (antennae and receivers)
3. Data pre-processing (formatting and recording)
4. Data storage and dissemination (archiving and reproduction)
5. Data analysis (interpretation or user processing)
6. Information utilization (practical application by users)."³⁸

³⁵U.N. Doc. A/AC. 105/171 (28 May 1976), Annex III, p. 2. The WG also received a working paper from Mongolia, U.N. Doc. A/AC. 105/C.2/L. 107, reading as follows:

States participating in remote sensing should respect the principle of full and permanent sovereignty of all States and peoples over their wealth and natural resources as well as their inalienable right to dispose of their natural resources.

³⁶U.N. Doc. A/AC. 105/171 (28 May 1976), Annex III, p. 3.

³⁷*Id.*, at 4.

³⁸U.N. Doc. A/AC. 105/195 (1 March 1977), pp. 8 and 9.

The S & T Subcommittee then went on to rewrite the definitions of "data" and "information" that had been used by the WG, replacing the term "data" with "primary data," and the term "information" with "analyzed information" as follows:

- (1) The term 'primary data' means those data which are acquired by satellite-borne remote sensors and transmitted from a satellite either by telemetry in the form of electro-magnetic signals or physically in any form such as photographic film or magnetic tape, as well as the pre-processed products derived from those data which may be used for later analysis;
- (2) The term 'analysed information' means the end-product resulting from the analytical process performed on the primary data combined with data and knowledge obtained from sources other than remote sensing satellites.³⁹

The S & T Subcommittee noted that "with the present state-of-the-art systems, the term 'primary data' referred to the products generated in system elements 1 through 4 listed above and transformed into 'analyzed information' in element 5."⁴⁰ The definitions, as thus rewritten by the S & T Subcommittee, were presented by Sweden to the Legal Subcommittee at its 1977 session,⁴¹ but time did not permit their detailed consideration by the WG.

Also at the 1977 session of the S & T Subcommittee, the USSR submitted a working paper which introduced the concept of classifying remote sensing data on the basis of spatial resolution as follows:

- 'Global' information, with spatial resolution ranging from several hundred metres to several kilometres, and covering distances ranging from several hundred kilometres to 2,000-3,000 kilometres;
- 'Regional' information, with spatial resolution ranging from 50-100 to 300-500 metres, and covering distances ranging from 180-200 to 600-800 kilometres;
- 'Local' information, with spatial resolution ranging from several metres to 30-50 metres, and covering distances of less than 150-180 kilometres.

The Soviet paper is reproduced in Appendix XI.⁴² As noted in the Report of the S & T Subcommittee:

³⁹*Id.*, p. 9. The definitions formulated by the S & T Subcommittee were based on a working paper submitted by Sweden, U.N. Doc. A/AC. 105/C. 1/L. 95.

⁴⁰*Id.*, p. 10.

⁴¹U.N. Doc. A/AC. 105/196 (11 April 1977), Annex III, p. 7.

⁴²U.N. Doc. A/AC. 105/C. 1/L. 94 (15 February 1977).

There was no agreement in the Subcommittee on the concept that such classifications were necessary nor that they should be made on the basis of spatial resolution, nor on appropriate numerical values to be applied to the resolution for each of the categories.⁴⁵

At the 1977 meeting of the Legal Subcommittee, the WG added several draft principles to five formulated at its 1976 meeting,⁴⁴ including an unnumbered and entirely bracketed principle based on the working paper submitted by Mongolia.⁴⁵ These additional draft principles are reproduced in Appendix XII.⁴⁶

During its 1977 session, the full COPUOS took note of the definitions of "primary data" and "analyzed information" that had been formulated by the S & T Subcommittee and recommended that the Legal Subcommittee adopt those definitions.⁴⁷ The COPUOS also noted that the S & T Subcommittee had discussed the Soviet proposal "to classify remote sensing data into three categories—global, regional and local—based on spatial resolution," but that there was "no agreement in the Subcommittee on the concept or the need for such classification or that they should be made solely on the basis of spatial resolution."⁴⁸ In this connection, as stated in the 1977 COPUOS report:

The Committee agreed with the view of the Subcommittee that an attempt should, however, be made on scientific bases to provide a technical definition of spatial resolution and to determine what aspects of data, such as resolution, spectral characteristics, polarization, etc., may correspond to particular applications. The Committee therefore endorsed the recommendation of the Subcommittee that the Secretariat should conduct a study on the matter, which would be discussed by the Subcommittee at its next session.⁴⁹

Such a study was completed by the Secretariat, with the assistance of the COSPAR (the Committee on Space Research, International Council of Scientific Unions), and the report of the study⁵⁰ was considered during the 1978 session of the S & T Subcommittee. As stated in the report of that session:

⁴³*Supra* note 40.

⁴⁴See Appendix X.

⁴⁵*Supra* note 35.

⁴⁶The draft principles in their entirety are found at U.N. Doc. A/AC. 105/196 (11 April 1977), Annex III, pp. 4-6.

⁴⁷U.N. Doc. A/32/20 (9 August 1977), p. 9.

⁴⁸*Ibid.*

⁴⁹*Ibid.*

⁵⁰U.N. Doc. A/AC. 105/204.

The study covers the concept of resolutions such as spatial, temporal, radiometric and spectral resolutions, and their applications in remote sensing surveys. It also considers remote sensing systems/sensors which have either been flown aboard spacecraft or simulated through aircraft data. The sensors considered include those that apply to photographic, television and multispectral scanning systems (MSS) as well as radar systems, to a lesser extent. The performance demonstrated by these systems are also discussed. The study notes that information currently available is not sufficient to permit exact determination of technical parameters required of remote sensing systems in order to achieve specific applications objectives.

The Subcommittee, however, noted the view of some delegations that this report had some shortcomings and, in this connection, noted in particular the information brought to its attention by the delegation of Belgium that angular resolution of an optical system was proportional to the diameter of the aperture and inversely proportional to the wavelength. One should bear in mind that the higher the resolution, the smaller the object to be detected might be. It also noted that according to experience gained so far in comparing the imaging capability of photographic systems and scanner systems, the ratio between the photographic spatial resolution and the instantaneous field of view (IFOV) of a scanner as well as television resolution was approximately between two and three to one.²¹

The discussion of spatial resolution during the 1978 S & T Subcommittee meeting brought into sharp focus the different views on its significance. Those views were summarized in the Subcommittee's report:

In the view of some delegations there was no simple or practical scientific basis for categorizing remote sensing data according to its applications into global, regional and local classifications on the basis of spatial, temporal, spectral or radiometric resolution. Other delegations expressed the view that although such classifications might not be based on spectral and spatial resolution, it could be made taking into account other parameters as well. Some delegations felt that, in any event, there was no need to classify data into global, regional and local. Still other delegations expressed the view that it was important to have such a classification and that spatial resolution is the key parameter for classifying remote sensing data.

Several delegations were of the view that a sensing State possessing primary data about a sensed State finer than a certain spatial photographic resolution should not disseminate such data to a third State without the permission of the sensed State. The Soviet Union and some other delegations suggested that the appropriate limit might be 50 metres (*in situ* photographic resolution, which meant in the definition given by the Soviet Union 'the smallest size of an object that still could be seen on a photograph'), since open dissemination of data with resolution finer than 50 metres might affect the economic and/or defence interests of sensed States. In this connection, the United States delegation noted that in the course of the United States Skylab programme (1973-1974) photographic imagery of several areas of the earth had been collected with photographic resolution in the range of 15 to 20 metres. This imagery has been available and disseminated on the same basis as Landsat data and up to the present time the United States was unaware of any difficulties having arisen. Some delegations felt that satellite-sensed primary data, irrespective of their spatial resolution, ought to be openly disseminated in order to give all States equal access to all data. Some delegations noted that, in any case, primary data or analyzed information should be accessible to the sensed State before being disseminated to a third party. Some delegations felt that

²¹U.N. Doc. A/AC.105/216 (6 March 1978), p. 7.

dissemination of primary data as well as analyzed information to third parties should not be to the detriment, economically or otherwise, of the sensed States. The United States and some other delegations expressed the view that analyzed information was the work product of and the property of the analyzer and therefore could not be treated in the same manner as primary data.⁵²

As a result, the S & T Subcommittee

was not in a position to agree upon specific recommendations on the need for classification of data nor the manner in which such a classification may be made. The Subcommittee, however, noted the suggestion that the work in this field initiated by COSPAR could be continued theoretically and experimentally to gather relevant information to relate different classes of data with various applications as well as further elaboration on the relationship of system characteristics, spatial resolution, and instantaneous field of view, and agreed that the Secretariat should be requested to submit a supplemental study thereon to the Subcommittee for consideration at its next session.⁵³

During the 1978 session of the Legal Subcommittee, the WG made several significant changes to the 1977 draft principles. It incorporated the S & T Subcommittee's definitions of "primary data" and "analyzed information" and added a new definition of the term "remote sensing of the earth," but with the clear understanding, as documented in footnotes, that there was no final agreement on the definitions.⁵⁴ The definitions were added as a new Principle I, and the earlier Principles I through XI (Appendices X and XII) were renumbered II through XII, respectively, and included with only minor amendments. The WG added several draft principles, but since there was no agreement on these principles, each was set off in its entirety by square brackets. The new draft principles included Principle XIII on "full and permanent sovereignty of all States and peoples over their wealth and natural resources;"⁵⁵ Principle XIV on "advance notification to a State whose territory will be sensed;" Principle XV on "consultations" between the sensing and the sensed State;⁵⁶ Principle XVI on dissemination of remote sensing data or information;⁵⁷ and Principle XVII on disputes.⁵⁸ The entire set of principles reported by the 1978 WG are reproduced in Appendix XIII.⁵⁹

⁵²*Id.* at 7 and 8.

⁵³*Id.* at 8.

⁵⁴U.N. Doc. A/AC. 105/218 (13 April 1978), Annex III, p. 5.

⁵⁵Draft Principle XIII was based on the 1976 Mongolian proposal, *supra* note 35.

⁵⁶Draft Principle XV was based on a working paper submitted to the WG by Mongolia, WG. III (1978) WP. 1.

⁵⁷Draft Principle XVI was based on a working paper submitted by Chile, Nigeria and Sierra Leone.

⁵⁸Draft Principle XVII was based on a working paper submitted by Austria.

⁵⁹*Supra* note 54, at pp. 5-8.

Given the scope of the principles drafted, albeit without reaching any agreement at the 1978 session of the WG, the efforts of the WG during the 1979 session of the Legal Subcommittee centered around a consideration of several working papers submitted by a number of States.⁶⁰

These working papers, which are reproduced in Appendix XIV, included:

A proposal of the USSR to establish a prior-consent regime for "primary remote-sensing data with a spatial resolution of 30 meters or finer and to analyzed remote-sensing information obtained on the basis of such data." The express consent of the sensed State would be required before such data or information could be published or given to another State;⁶¹

A proposal of the USSR which would require a sensing State to inform a sensed State of the data required, and to transfer those data to the sensed State by mutual agreement;⁶²

A proposal of Romania which would give the sensed State the right of access to the data and information relating to its territory, the right without conditions to "consult recordings" relating to its territory, and the right to receive images at "reasonable prices;"⁶³

A proposal of Romania that would require "full respect for the principle of permanent sovereignty of all States and all peoples over their wealth and their natural resources and for their inalienable right to dispose of them, including the right of access to information relating to them;"⁶⁴

A proposal of the U.S. which would require a sensing State, to the extent feasible, to furnish the Secretary-General information on the nature of the remote-sensing program and the geographic area covered, would require the Secretary-General to publish such information, and would require the sensing State to furnish such information as soon as practicable to any State which so requested. To the extent feasible and practicable, the Secretary-General would be given advance notification of a State's intention to conduct a remote sensing program;⁶⁵

A proposal of the USSR to rewrite the definition of "remote sensing of the earth from outer space" as follows:

The term 'remote sensing of the earth from outer space' means observations and measurements of energy and polarization characteristics of self-radiation and reflected

⁶⁰U.N. Doc. A/AC.105/240 (10 April 1979), Annex I, pp. 12 and 13 and Annex IV, p. 1.

⁶¹WG. III (1979)/WP. 1/Rev. 1.

⁶²WG. III (1979)/WP. 3.

⁶³U.N. Doc. A/AC.105/C.2/L.122 (26 March 1979).

⁶⁴U.N. Doc. A/AC.105/C.2/L.123 (26 March 1979).

⁶⁵WG. III (1979)/WP. 7.

radiation of elements of the land, ocean and atmosphere of the earth in different ranges of electromagnetic waves which facilitate the location, description of the nature and temporal variations of natural parameters and phenomena, natural resources of the earth, the environment as well as anthropogenic objects and formations.⁶⁶

A proposal of Romania and Iraq that "data and/or information obtained by remote sensing of the earth concerning a natural disaster shall be disseminated as promptly as possible to those States affected or likely to be affected."⁶⁷

With respect to the principles themselves, the 1979 WG removed the square brackets from the words "primary" and "analyzed" in Principles I, but retained the footnotes; added a new paragraph to Principle VIII in square brackets along the lines of the Romania/Iraq proposal on the dissemination of remote sensing data and/or information obtained *during* and *after* natural disasters; and renumbered Principles XIII, XIV, XV and XVI as Principles XVI, XIII, XIV, XV, respectively. The principles, as they were set forth in the 1979 Legal Subcommittee report,⁶⁸ are reproduced in Appendix XV.

At its 1979 session, the full COPUOS noted that despite the progress on drafting remote sensing principles, "several key issues remained to be agreed upon before the draft principles could be finalized."⁶⁹ It recommended that the Secretariat continue its efforts in conjunction with COSPAR "to gather relevant information to relate different classes of data with various applications as well as to elaborate further on the relationship of system characteristics, spatial resolution, instantaneous field of view modulation transfer functions and the new concept of effective resolution element."⁷⁰

The S & T Subcommittee, at its 1980 session in February, continued its consideration of ways to classify remote-sensing data. It concluded:

In relation to the classification of data for the purpose of dissemination, some delegations reiterated the view that one of the criteria for the classification of the data could be the types of application for which the data would be used.

Some delegations expressed the view that there are no objective scientific or technical reasons for classifying primary data in some rigid fashion into categories which could be subjected to different dissemination rules.

⁶⁶WG. III (1979)/WP. 9.

⁶⁷WG. III (1979)/WP. 11.

⁶⁸U.N. Doc. A/AC. 105/240 (10 April 1979), Annex I, pp. 7-11.

⁶⁹U.N. Doc. A/34/20 (14 August 1979), p. 7.

⁷⁰*Id.* at 5. The Secretariat had submitted a follow-on report on the "Characteristics and capabilities of sensors for earth resources surveys" for the consideration of the S & T Subcommittee at its 1979 Session, U.N. Doc. A/AC. 105/204/Add. 1 and Coord. 1.

Some delegations expressed the view that very little public information exists about certain very high resolution earth observation systems. Unless such information is taken into account while discussing the issue of classification of data, the Subcommittee might find it difficult to arrive at concrete results.⁷¹

The Subcommittee went on to discuss the replies it had received on its request for possible definitions of the terms "coarse," "medium," and "fine" as applied to spatial resolution in remote sensing. Based on these replies, it concluded:

In summary, the view of those Governments who replied was that these terms cannot be given precise quantitative definitions and that these concepts, which should only be used in a relative sense, may require different definitions depending upon applications.⁷²

During the meeting of the Legal Subcommittee in 1980, the WG "agreed that it would for the time being leave aside those principles on which tentative agreement had already been reached and would consider the remaining principles, namely, Principles I, VIII, IX, XI, XII, XIII, XIV, XV and XVII, with the understanding that any of the remaining principles could be referred to by any delegation."⁷³ Based on the work of an informal drafting group, the Legal Subcommittee was able to reach agreement on a revised Principle VIII on the use of remote sensing primary data and/or analyzed information in notifying other States of impending natural disasters or in assisting them in dealing with such disasters. The newly agreed upon Principle VIII, which appears in the latest draft of the Principles (Appendix I), reads as follows:

Remote sensing of the earth from outer space should promote the protection of mankind from natural disaster. To this end, States which have identified primary data from remote sensing of the earth and/or analyzed 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.⁷⁴

A footnote was added that the meaning of the term "natural disaster" was "subject to further discussion."⁷⁵ Nevertheless it was clear—based on information provided by a representative of the Office of the United Nations Disaster Relief Coordinator (UNDRO) and discussions of the WG—that "the concept of natural disaster normally refers to a sudden event with catastrophic effects upon large numbers of people such as

⁷¹U.N. Doc. A/AC.105/267 (15 February 1980), p. 10.

⁷²*ibid.*

⁷³U.N. Doc. A/AC.105/271 (10 April 1980), Annex II, p. 1.

⁷⁴*Id.* at 9.

⁷⁵*ibid.*

an earthquake, flood, hurricane, tidal wave or a volcanic eruption, but it could occasionally refer also to man's impact upon the environment as in the case of a fire or an aircraft accident."⁷⁶

No progress toward consensus was made during the 1980 session of the WG in its consideration of the question relative to dissemination of data and of that concerning the need for or method of classifying remote sensing data based on spatial resolution.

During the 1980 session of the full COPUOS, some delegations expressed concern about the lack of progress on these questions, with one delegation expressing the view that "the lack of progress in this area was due to the fact that the discussions in the Committee and its subsidiary bodies did not taken into account the total range of earth observation satellites extending from meteorological satellites to surveillance satellites."⁷⁷ The COPUOS endorsed the request of the S & T Subcommittee, in connection with the classification of remote sensing data, that the International Society of Photogrammetry "review the definitions of 'effective radiometric resolution element' (ERRE) and 'spatial effective resolution element' (SERE), and to inform the Subcommittee, at its next session, of more precise definitions of these concepts, if any."⁷⁸ The COPUOS also urged the Legal Subcommittee to continue its efforts on remote sensing principles at its next session.

Conclusion

Over the past several years, the COPUOS and its Legal and S & T Subcommittees have achieved significant progress in drafting and reaching consensus on several important legal principles on remote sensing. Further progress has been limited, not by a lack of technical or drafting skills on the part of delegations to the COPUOS and its Subcommittees, but instead because of strongly held divergent views on key issues. Realistically, however, the failure of COPUOS to reach a consensus on the remaining issues has not in any appreciable way inhibited real international progress in the widespread and effective use of our ability to view the earth from the vantage point of space.

⁷⁶*Id.* at 2.

⁷⁷U.N. Doc. A/35/20 (7 August 1980), p. 6.

⁷⁸*Ibid.*

APPENDIX I

(U.N. Doc. A/AC. 105/271 (10 April 1980), Annex II, pp. 7-11)

TEXT OF DRAFT PRINCIPLES WITH RESPECT TO REMOTE SENSING OF THE NATURAL RESOURCES OF THE EARTH AND ITS ENVIRONMENT AS CONTAINED IN THE REPORT OF THE LEGAL SUBCOMMITTEE ON THE WORK OF ITS 1980 SESSION

Principle I¹

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 co-operation 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 co-operation, the particular needs of the developing countries.

¹The content, definition and necessity of the term "analysed information" is still to be clarified.

²The question of the application of these principles to international intergovernmental organizations will be considered later.

³The 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.

⁴This 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."

Principle III

Remote sensing of the earth from outer space [shall] [should] be conducted 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 the 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.*** 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 IX¹

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.*, **

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.]

*Some delegations were of the view that, for the sake of consistency it was necessary to consider this principle in the light of draft principles 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."

***The meaning of this term is subject to further discussion.

¹Should 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."

Principle XII

A sensed State [shall] [should] have timely and non-discriminatory 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^{1, 2} [To the greatest extent feasible and practicable,] this principle shall also apply to analysed information.]

Principle XIII

[[A State which intends to conduct remote sensing of the earth from outer space shall give advance notification to the States whose territory will be sensed.] [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 the earth [should] [shall] be conducted with respect

¹The question of from which States access to and provision of data should be obtained, needs further consideration.

²Subject to review in the light of the discussion on access by third States.

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.]*

APPENDIX II

(U.N. Doc. A/AC. 105/111 (14 Feb. 1973), pp. 11-12)

USSR PRELIMINARY DRAFT OF LEGAL PRINCIPLES TO BE APPLIED BY STATES UTILIZING SPACE TECHNOLOGY IN EXPLORING THE RESOURCES OF THE EARTH

1. Activities connected with the exploration of the natural resources of the earth by means of space technology shall be conducted in conformity with the principles of international law, including the United Nations Charter, and in the interests of peace and progress for all peoples.

2. States which utilize space technology for the purpose of exploring the resources of the earth shall undertake to respect the sovereignty of other States and, in particular, their inalienable right to control their own natural resources as well as information concerning such resources.

3. International co-operation in the utilization of space technology for the purpose of exploring the natural resources of the earth must promote the independent economic development of all States and shall be based on respect by States for each other's interests.

4. A State which engages in exploration of the natural resources of the earth by means of space technology and, in the course of such activities, obtains information

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

concerning the natural resources of another State shall be required to transmit such information to the latter State under mutually acceptable conditions.

5. A State which, by means of space technology, obtains information concerning the natural resources of another State shall not be entitled to make such information public or transmit it to a third State or international organization without the express consent of the State to which these natural resources belong or to utilize the information in any other manner to the detriment of the latter State.

APPENDIX III

(U.N. Doc. A/AC.105/C.1/WG.4/L.6 (28 Nov. 1973), pp. 13 and 14)

SUBMISSION OF CANADA TO THE COPUOS SECRETARIAT ON "POSSIBLE OPTIONS" ILLUSTRATING RIGHTS AND OBLIGATIONS REGARDING THE THREE PHASES OF REMOTE SENSING BY SATELLITE

Sensing phase

- (1) Complete freedom for sensing States and an absence of rights for sensed States;
- (2) A right for sensed States to be informed that their territories are being sensed, with a concomitant duty for the sensing States fully to disclose information about their programmes-but without the right for sensed States to object;
- (3) A right for sensed States to participate in programme formulation and implementation;⁶
- (4) A right for sensed States to be informed while the sensing is taking place, and to object on the grounds that it would be contrary to the national interest to reveal certain features of their territories;
- (5) A requirement of the sensed States' consent before sensing.

Receipt of raw data and processing phase

- (1) An absence of rights for sensed States to determine whether, to whom and under what conditions raw data pertaining to their territories will be distributed for processing;
- (2) Universal and expeditious dissemination of all raw data by sensing States;

⁶This option might also be considered under subsequent phases.

(3) Priority of access by sensed States to raw data pertaining to their territories, involving the right to receive such data as soon as they become available to the sensing States;

(4) Exclusive rights for sensed States in raw data pertaining to their territories, including the right to determine their distribution.

Dissemination and interpretation of processed data

(1) Universal and expeditious dissemination by sensing States of all processed data;

(2) Priority of access by sensed States to processed data pertaining to their territories, involving the right to receive such data as soon as processed;

(3) Exclusive rights for sensed States to receive processed data pertaining to their territories and to determine their dissemination;

(4) Universal and expeditious dissemination by States which have developed advance interpretation methods of information regarding such methods.

APPENDIX IV

(U.N. Doc. A/AC. 105/133 (6 June 1974), Annex IV, pp. 1-3;
U.N. Doc. A/AC. 105/C.2/L.73)

TEXT OF DRAFT OF ARGENTINA ON INTERNATIONAL
AGREEMENT ON ACTIVITIES CARRIED OUT THROUGH
REMOTE-SENSING SATELLITE SURVEYS OF EARTH
RESOURCES

The States Parties to the present Agreement:

Considering that there is an urgent need for over-all surveys of earth resources by means of remote sensors installed in satellites and that the expected benefits will only be obtained through a general international convention and agreements on collaboration,

Further considering that the principal economic assets of any country are human and natural resources, provided that these are identified and used,

Convinced that the promise of such benefits raises legal problems which must be solved without delay,

Reaffirming that these new techniques will act as an effective stimulus to economic and social development, and materially contribute to the welfare of all mankind by enabling the inventory, planning, development, exploitation and conservation of natural resources to be undertaken on the basis of international co-operation.

Bearing in mind United Nations General Assembly resolution 2600 (XXIV) of 16 December 1969, which is concerned, in particular, with the techniques of remote earth resources surveying, and requests greater international co-operation with a view to reaping practical benefits from the new technology,

Believing that the rights of the States to which the resources belong should be established at the international level in relation to collective consumption requirements,

Recalling United Nations General Assembly resolution 1314 (XIII) of 12 December 1958, which declares that the permanent sovereignty of peoples and nations over their natural wealth and resources is a basic constituent of the right to self-determination.

Inspired by the Treaty on the Principles Governing the Activities of States in the Exploration and Use of Outer Space including the Moon and Other Celestial Bodies, of 27 January 1967,

Have agreed on the following:

Article I

The techniques of remote-sensing satellite inventory and study of earth resources shall be used in close international co-operation for the benefit of all mankind.

Article 2

Until such time as some other appropriate body is available, the United Nations Secretariat shall be responsible for the functions of planning, consultation, information, inventorying and co-ordination of such activities in the initial stage to meet immediate needs, with a view of internationalizing over-all surveys of resources.

Article 3

A data bank shall be established for that purpose, to which all States shall have access. When appropriate, the data bank shall disseminate on a world-wide basis the findings and practical results in respect of the use of such techniques to inventory and survey earth resources, with special reference to the interests and needs of the developing countries.

Article 4

The programmes for world-wide remote sensing will prevent the exploitation of natural resources from causing the spoliation or destruction of the environment, and will make for the preservation of a satisfactory balance through the increase of renewable resources in those areas which are best able to help maintain it.

Article 5

Until remote-sensing satellite surveys of earth resources have been placed on an international footing, the activities of the States which undertake such surveys must be based on the principle of equality between States and of the honourable fulfilment of international commitments, as well as the other principles of international law regarding friendly relations and co-operation between States.

Article 6

Surveys of natural resources and their findings with respect to the sea beyond State jurisdiction or of the ocean floor and subsoil beyond the limits of national jurisdiction shall be transmitted to the data bank. If the surveys involve the national territory and jurisdictional waters of one or more States, the facts and findings shall be promptly communicated to the State or States concerned and transmitted to the data bank.

Article 7

The principle of equality of rights and the self-determination of peoples embraces not only the right to internal sovereignty and independence, but also the economic aspect of the freedom to use and distribute their wealth, whereby the peoples may exercise their legitimate and exclusive rights over their natural resources. By virtue of this principle, the States shall exchange information among themselves on the discovery of new areas or of improved methods of exploiting natural resources, and shall transmit such information to the data bank.

Article 8

The exploitation of the natural resources of each State in its territory and in its jurisdictional waters shall be governed solely by national laws and regulations. Efforts shall be made by means of international agreements to improve the distribution of the resources and to plan concerted action to meet collective consumption requirements, with respect to the basic elements for subsistence essential raw materials and natural processes the knowledge of which would raise mankind's level of living.

APPENDIX V

(U.N. Doc. A/AC.105/133 (6 June 1974), Annex IV, pp. 3-5;
U.N. Doc. A/AC.105/122)

PROPOSAL OF BRAZIL ON TREATY ON REMOTE SENSING OF
NATURAL RESOURCES BY SATELLITES

1. National and international programmes for remote sensing of natural resources by satellites shall promote international co-operation and their implementation shall

benefit and serve the interests of all countries, taking especially into consideration benefits to and the interests of the developing countries.

2. States Parties shall carry out activities of remote sensing of natural resources by satellites in accordance with international law, including the Charter of the United Nations, the Treaty on Principles Governing the Activities of States on the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, and the principles contained in the resolutions of the United Nations General Assembly concerning permanent sovereignty of peoples and nations over their natural resources, in particular resolutions 1803 (XVII), of 14 December 1962, and 2158 (XXI), of 25 November 1966.

3. States Parties shall refrain from undertaking activities of remote sensing of natural resources belonging to another State Party, including the resources located in maritime areas under national jurisdiction, without the consent of the latter.

4. States Parties are entitled to take measures, in accordance with international law, to protect their territory and maritime areas under their jurisdiction from remote sensing activities for which they had denied their consent.

5. States Parties whose territory and maritime areas under their jurisdiction are the object of remote sensing of natural resources are entitled, if they so request, to participate in those activities.

6. States Parties whose territory and maritime areas under their jurisdiction are the object of remote sensing of natural resources are entitled to full and unrestricted access to all data obtained through those activities.

7. States Parties obtaining information relating to the natural resources of another State Party through remote sensing shall neither divulge such information nor transmit or transfer it in any manner to a third State, international organization or private entity, without the express authorization of the State Party to which the natural resources belong, nor can they utilize the information thus obtained to the detriment of the latter.

8. States Parties shall refrain from soliciting, accepting and, in any manner, receiving from a third State, international organization or private entity, information regarding the natural resources of another State Party obtained through remote sensing without the express authorization of the State Party to which the natural resources belong; nor can they utilize such information to the detriment of the latter.

9. States Parties possessing the technological capability for remote sensing shall endeavour to assist other States Parties lacking this technology in the implementation of national programmes for surveying natural resources planned by the latter.

10. States Parties acknowledge the right of all States to participate fully in activities of remote sensing of natural resources of terrestrial and maritime areas outside national sovereignty or jurisdiction, as well as the need to guarantee free access to information obtained through these activities.

11. States Parties shall be held internationally responsible for national activities of remote sensing of natural resources, irrespective of whether such activities are carried out by governmental or non-governmental entities, and shall guarantee that such activities will comply with the provisions of the present treaty.

12. Disputes resulting from activities of remote sensing of natural resources shall be resolved in accordance with the methods envisaged in Article 33 of the Charter of the United Nations.

13. States Parties are entitled to conclude agreements in conformity with stipulations of the present treaty.

14. Nothing in these articles shall affect the rights and obligations contracted by States Parties through bilateral or regional agreements.

APPENDIX VI

(U.N. Doc. A/AC.105/133 (6 June 1974), Annex IV, pp. 5 and 6;
U.N. Doc. A/AC.105/L.69)

DRAFT OF FRANCE ON PRINCIPLES GOVERNING REMOTE SENSING OF EARTH RESOURCES FROM OUTER SPACE

1. Outer space may be used freely by all States, without any discrimination, under conditions of equality and in accordance with international law, including the United Nations Charter and the 1967 Outer Space treaty, for engaging in the remote sensing of earth resources exclusively for peaceful purposes.

2. Such use shall, in particular, respect the principle of the sovereignty of States, with special reference to the right of permanent sovereignty of peoples and nations over their wealth and resources as a basic constituent of their right to self-determination, in accordance with the principles laid down in United Nations General Assembly resolutions 1803 (XVII) of 14 December 1962 and 2158 (XXI) of 25 November 1966.

3. Remote sensing of earth resources from outer space shall be carried out for the good and in the interests of all countries, whatever their state of economic or scientific development, and the results of such activity should contribute to an improvement in the balance of the natural environment.

4. Every State engaging in remote sensing of earth resources from outer space shall inform the Secretary-General of the United Nations of the date, duration, nature and objectives of that activity and of the areas which may be affected. In addition, every State whose territory or territorial sea is affected by remote sensing shall receive prior notification thereof from the State, States, or international organization responsible for such activity.

5. (1) Every State territorially affected by remote sensing of earth resources shall have the right, if it so requests, to participate therein on fair and reasonable terms. (2) Use of the documents resulting from a remote-sensing operation may not be granted to third parties, whether Governments or private persons, without the consent of the State whose territory is affected.

6. Where remote-sensing activities cover land or sea areas outside the jurisdiction of States, all States shall have the right to participate therein on fair and reasonable terms; they shall also have the right to receive the results of such activities, on the same terms, within the framework of an organized system of international co-operation.

APPENDIX VII

(U.N. Doc. A/AC. 105/133 (6 June 1974), Annex IV, pp. 9 and 10;
U.N. Doc. A/AC. 105/C.2/L.99 (27 May 1974))

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

1. Outer space shall be free for use by all States, without discrimination of any kind on a basis of equality and in accordance with international law, including the United Nations Charter and the 1967 Outer Space Treaty, for carrying out remote sensing of earth resources exclusively for peaceful purposes.

2. 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.

3. Activities in the field of remote sensing of earth resources from outer space and international co-operation in that field shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and their results should contribute to an improvement in the balance of the natural environment.

4. A State engaged in the exploration of natural resources by means of space technology which, in the course of such activities, obtained information on the natural resources of another State must transmit such information to the latter State on mutually acceptable terms.

5. (a) Any State whose territory is affected by activities connected with the remote sensing of earth resources may, in agreement with the State conducting the remote sensing, participate in those activities on equal and mutually acceptable terms.

(b) A State which obtains information concerning the natural resources of another State as a result of remote sensing activities shall not be entitled to make it public without the clearly expressed consent of the State to which the natural resources belong or to 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.

(c) Exception from the principle contained in subparagraph (b) above is made for information on natural disasters and phenomena which can be detrimental to the environment in general.

6. All States shall be entitled on equal and mutually acceptable terms to receive and process data resulting from activities in the remote sensing of areas situated outside the national jurisdiction of any State. They shall also be entitled to access, on the same terms, to the results of such activities within the framework of institutionalized international co-operation.

7. Every State conducting activities in the field of remote sensing of earth resources shall inform the Secretary-General thereof, in accordance with article XI of the Outer Space Treaty.

APPENDIX VIII

(U.N. Doc. A/C.1/1047 (October 1974))

TEXT OF JOINT PROPOSAL OF ARGENTINA AND BRAZIL ON DRAFT BASIC ARTICLES FOR A TREATY ON REMOTE SENSING OF NATURAL RESOURCES BY MEANS OF TECHNOLOGY

The States Parties to this Treaty:

Considering that the global research of earth resources by means of space technology is an effective way of determining the existence and the location of these resources, as well as the possibilities of increasing them, with a view to cope with the growing scarcity of food and raw materials;

Considering further that the main economic assets of every State are its human and natural resources;

Convinced that the new techniques of remote sensing of earth resources, as an effective stimulus for economic and social development, will admittedly contribute to the well-being of humanity as a whole, and allow for international co-operation, taking particularly into account the needs and interests of the developing countries;

Conscious of the multiple and relevant international effects derived from the use of the technology of remote sensing of earth resources, which create legal problems that require an immediate and equitable solution in the framework of a general treaty and agreements on mutual co-operation;

Reaffirming the principles contained in the United Nations General Assembly resolutions concerning the permanent sovereignty of peoples and nations over their own natural resources, in particular resolutions 1803 (XVII) of 14 December 1962 and 2158 (XXI) of 25 November 1966;

Desiring to safeguard the exercise of the sovereign rights of States over their own natural resources;

Taking into account the principles of international law, 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;

Have agreed on the following:

Article I

National and international programmes for remote sensing of natural resources by means of space technology shall promote international co-operation and their implementation shall benefit and serve the interest of all mankind, taking especially into consideration benefits to and the interest and needs of the developing countries.

Article II

States parties shall carry out activities of remote sensing of natural resources by means of space technology in accordance with the principles of international law, 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.

Article III

Programmes for world-wide remote sensing shall take into account the need to prevent the exploitation of natural resources from causing the spoliation or destruction of the environment.

Article IV

Activities of remote sensing of natural resources by means of space technology must be based on the principle of sovereign equality of States and of the honourable fulfilment of international commitments, as well as other relevant principles of international law regarding friendly relations and co-operation among States. The principles of sovereign equality of States and self-determination of peoples embrace not only the right to internal sovereignty and independence, but also the economic aspect of the freedom to use and distribute their wealth, whereby peoples may exercise their legitimate and exclusive sovereign rights over their own natural resources.

Article V

States parties shall refrain from undertaking activities of remote sensing of natural resources belonging to another State party, including the resources located in maritime areas under national jurisdiction, without the consent of the latter.

Article VI

States parties will take all measures authorized by international law to protect their territory and maritime areas under their jurisdiction from remote sensing activities for which they had denied their consent.

Article VII

States parties which have given consent for their territory and maritime areas under their jurisdiction to be the objects of remote sensing of natural resources are entitled to participate in those activities in a manner to be decided upon by specific arrangements between the parties concerned, which will include the guarantee of technical assistance to be provided by the sensing State to the sensed State during the whole process of these activities.

Article VIII

States parties whose territory and maritime areas under their jurisdiction are the object of remote sensing of natural resources are entitled to full and unrestricted access to all data obtained through those activities.

Article IX

States parties obtaining information relating to the natural resources of another State party through remote sensing shall neither divulge such information nor transmit or transfer it in any manner to a third State, international organization or private entity, without the express authorization of the party to which the natural resources belong, nor can they utilize the information thus obtained to the detriment of the latter.

Article X

States parties shall refrain from soliciting, accepting or, in any manner, receiving from a third State, international organization or private entity, information regarding the natural resources of another State party obtained through remote sensing without the express authorization of the State party to which the natural resources belong, nor can they utilize such information to the detriment of the latter.

Article XI

States parties possessing the technological capability of remote sensing shall endeavour to assist other States parties lacking this technology in the implementation of national programmes for surveying natural resources planned by the latter.

Article XII

States parties acknowledge the right of all States to participate fully in activities of remote sensing of natural resources of territorial and maritime areas outside national sovereignty or jurisdiction, as well as the need to guarantee free access to all information obtained through these activities.

Article XIII

States parties shall be held internationally responsible for national activities of remote sensing of natural resources, irrespective of whether such activities are carried out by governmental or non-governmental entities, and shall guarantee that such activities will comply with the provisions of the present treaty.

Article XIV

Disputes resulting from activities of remote sensing of natural resources shall be resolved in accordance with the methods envisaged in Article 33 of the Charter of the United Nations.

Article XV

States parties are entitled to elaborate international agreements confirming, completing and developing the provisions of the present treaty.

Article XVI

Nothing in this treaty shall affect the rights and duties contracted by States parties through bilateral or regional agreements.

APPENDIX IX

(U.N. Doc. A/AC.105/C.2/L.103 (February 1975);
Press Release USUN 10 (75) (19 February 1975))

WORKING PAPER BY THE UNITED STATES ON THE
DEVELOPMENT OF ADDITIONAL GUIDELINES ON REMOTE
SENSING OF THE NATURAL ENVIRONMENT OF THE EARTH
FROM OUTER SPACE

Possible Preambular Provisions:

Recalling the provisions 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,

Reaffirming that the common interest of mankind is served by the exploration and use of outer space for peaceful purposes,

Considering that international cooperation in the continuing development of technology enabling mankind to undertake remote sensing of the natural environment of the Earth from outer space may provide unique opportunities for all peoples to gain useful understanding of the Earth and its environment,

Recognizing that the most valuable potential advantages to mankind from these technological developments, including among others preservation of the environment and effective management and control by States of their natural resources, will depend on the sharing of data and its use on a regional and global basis.

Source: Statement by Ronald Stowe, United States representative to the Legal Subcommittee of UNCOPUOS. Press Release USUN 10 (75) February 19th, 1975.

Possible Operative Provisions:

I. Remote sensing of the natural environment of the Earth from outer space shall be conducted in accordance with the principles of the United Nations Charter, 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 other generally accepted principles of international law relating to man's activities in outer space.

II. Satellites designed for remote sensing of the natural environment of the Earth shall be registered with the Secretary-General of the United Nations in accordance with the Convention on the Registration of Objects Launched into Outer Space. States shall as appropriate inform the Secretary-General of the progress of such remote sensing space programs they have undertaken.

III. Remote sensing of the natural environment of the Earth from outer space should promote *inter alia* (a) international cooperation in the solution of international problems relating to natural resources and the environment, (b) the development of friendly relations among States, (c) cooperation in scientific investigation, and (d) the use of outer space for the benefit and in the interest of all mankind.

IV. States undertaking programs designed for remote sensing of the natural environment from satellites shall encourage the broadest feasible international participation in appropriate phases of those programs.

V. States receiving data directly from satellites designed for remote sensing of the natural environment of the Earth shall make those data available to interested States, international organizations, individuals, scientific communities and others on an equitable, timely, and nondiscriminatory basis. To enhance the ability of all States, organizations and individuals to share in the knowledge gained from remote sensing of the natural environment from outer space, States should publish catalogues or other appropriate listings of publicly available data which they have received directly from such remote sensing satellites.

VI. States receiving data directly from such remote sensing satellites shall ensure in particular that data of a sensed area within the territory of any other State are available to the sensed State as soon as practicable, and in any event as soon as they are available to any State other than the sensing States. States owning such remote sensing satellites shall facilitate the direct reception of data from those satellites by other interested States when technically possible and on equitable terms.

VII. States engaged in such remote sensing programs shall within their capabilities endeavor to assist on an equitable basis other interested States, organizations and individuals to develop an understanding of the techniques, potential benefits and costs of remote sensing. Such assistance could include the provision of opportunities to learn what data are available, how to handle and interpret the data, and, where appropriate, how to apply the knowledge gained to meet national, regional and global needs.

VIII. States should cooperate with other States in the same geographical region in the use of data from such remote sensing programs, whether regional or global in nature, to promote the common development of knowledge about that region.

IX. States which undertake such remote sensing programs should encourage relevant international organizations to which they belong to assist other member States

in acquiring and using data from those programs so that the maximum number of States can share in potential benefits which may result from the development of this technology.

APPENDIX X

(U.N. Doc. A/AC. 105/171 (28 May 1976) Annex III, pp. 2 & 3)

DRAFT PRINCIPLES ON REMOTE SENSING FORMULATED BY WORKING GROUP III OF THE LEGAL SUBCOMMITTEE AT ITS 1976 MEETING

Principle Ia

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

Principle II^b

Remote sensing of [the natural resources of the earth] [and its environment] from outer space [shall] [should] be conducted 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.

Principle III^c

1. States carrying out programmes for remote sensing of [the natural resources of the earth] [and its environment] 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 elements. . .

^aBased on common element (a) of para. 7 of annex III to A/AC. 105/147.

^bBased on common element (b) of para. 7 of annex III to A/AC. 105/147.

^cBased on common element (c)-(d) of para. 7 of annex III to A/AC. 105/147.

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 IV^d

Remote sensing [of the natural resources of the earth] [and its environment] from outer space [should] [shall] identify and make available information useful for the prevention of phenomena detrimental to the natural environment of the earth.

Principle V^e

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

APPENDIX XI

(U.N. Doc. A/AC.105/C.1/L.94 (15 February 1977))

WORKING PAPER SUBMITTED BY USSR ON QUESTIONS RELATING TO REMOTE SENSING OF THE EARTH BY SATELLITES

There is as yet no generally accepted definition of the term "natural resources of the earth."

The following definition of the term is suggested in this paper:

The term "natural resources of the earth" refers to natural resources which form part of the whole aggregate of natural conditions of man's existence and important components of his natural environment and which are used in the process of social production in order to meet the material and cultural needs of society.

This definition is so broad and all embracing that virtually any information concerning the earth obtained by various means (including means employed in space) can be regarded as information which is used for the purpose of investigating the natural resources of the earth.

^dBased on common element (e) of para. 7 of annex III to A/AC.105/147.

^eBased on a new common element identified by the Working Group at the present session of the Subcommittee.

The term "remote sensing of the earth by satellites" refers to observations and measurements of the energy and polarization characteristics of the inherent and reflected radiation of elements of the land and ocean areas and atmosphere of the earth in different ranges of electromagnetic waves which are of assistance in describing the location, nature and time variation of natural parameters and phenomena, of natural resources of the earth, of the environment and of man made objects and formations.

What this definition means in effect is that, in and of itself, "remote sensing of the earth by satellites" does not as a rule make it possible to obtain *data on natural resources* in a given area without undertaking extensive and often costly work with ground and aircraft devices in order to obtain the necessary *a priori* and *a posteriori* information.

Thus two conclusions may be drawn:

(1) Any information about the earth obtained by remote sensing with the use of means employed in space may be treated as information relating to investigation of the natural resources of the earth;

(2) No information concerning the earth obtained by remote sensing by satellites makes it possible in and of itself to obtain *data on natural resources* but can be *used only for* investigating the natural resources of the earth in combination with information obtained by means other than those employed in space.

In this connexion, discussion of the legal regulation of activities of States in the field of remote sensing of the earth by satellites suggests the following alternatives:

Rejection of any regulation of activities involving the dissemination and use of information obtained by means employed in space for investigating the earth;

The formulation of legal norms regulating activities of States involving the dissemination and use of any information obtained by means of remote sensing of the earth by satellite.

Neither of these alternatives is practicable because they are both too extreme.

Rejection of any legal regulation could lead, as discussion of the subject in the United Nations shows, to violation of the sovereign rights of any State to dispose of its natural resources and of information concerning them.

On the other hand, the acceptance of legal norms regulating all activities of States in this field could lead to unjustified curtailment of the amount, and lessening of the effectiveness of the use, of information obtained by satellite in fields of such great importance for all mankind as hydrometeorology, oceanography, and sun-earth relationships, which are virtually unrelated to the problems of sovereignty.

For this reason it seems appropriate to suggest a conventional division of information concerning the earth obtained by satellite into that which is subject to legal regulation and that which is not, on the basis of the possibility of obtaining from the information in question data for the study of natural resources affecting the sovereign rights of States.

Within the framework of this discussion, the conventional division of the descriptive information concerning the earth which is obtained from outer space in the visible spectrum could be the following:

—“Global” information, with space resolution ranging from several hundred metres to several kilometres, and covering distances ranging from several hundred kilometres to 2,000-3,000 kilometres;

—“Regional” information, with space resolution ranging from 50-100 to 300-500 metres, and covering distances ranging from 180-200 to 600-800 kilometres;

—“Local” information, with space resolution ranging from several metres to 30-50 metres, and covering distances of less than 150-180 kilometres.

With a view to effectively meeting the needs of the world community for space information concerning the earth, it is suggested that information of a “global” and “regional” character should be freely disseminated. It is also suggested that the free dissemination and utilization of “global” and “regional” information should not lead to violations of the sovereign rights of States to their natural resources and to information concerning those resources.

At the same time, an analysis of foreign and national research on the question of the study of the earth’s natural resources by means of space technology (conducted by organs of the United National Outer Space Committee and in organizations in the USSR, the United States and other States) shows that, for the practical solution of the great majority of problems connected with the investigation of natural resources, users basically need information of a “local” character with space resolution of the order of 10 to 50 metres.

In fact, it will be seen from an analysis of the number of problems which can be solved with the help of space information as a function of the space resolution of the images (see figure 1) that in practice for most important problems what is required is pictures with a resolution of 10-50 metres. The graph in figure 1 reflects the space information requirements of such branches of the economy as: geology, agriculture and forestry, land improvement and water management, geography and cartography, fisheries and oceanography. These requirements will naturally differ from branch to branch and from country to country. It may be said, however, that the general trend shown in figure 1 will continue.

This means that it is information with resolution of 10-50 metres which will have the greatest effect on the most sensitive branches of the economy of the majority of States and their sovereign rights to their natural resources and to information on those resources.

Consequently, the dissemination by States of "local" information concerning the earth obtained from outer space with resolution of more than 50 metres should undoubtedly be subject to legal regulations in accordance with the principles already expounded by the USSR.

In view of the special needs of oceanography and fisheries, it should be possible to agree to the free dissemination of information relating to international waters with a resolution of not more than 10 metres.

The discussion of these proposals in the organs of the United Nations Outer Space Committee should make it possible to clarify and reconcile views concerning such a division of information, and subsequently to spell out and embody this division in a suitable legal instrument (treaty, agreement, principles).

APPENDIX XII

(U.N. Doc. A/AC. 105/196 (11 April 1977), Annex III, pp. 4-6)

ADDITIONAL DRAFT PRINCIPLES ON REMOTE SENSING FORMULATED BY WORKING GROUP III OF THE LEGAL SUBCOMMITTEE AT ITS 1977 MEETING

[For Principles I through V formulated at the Working Group's 1976 meeting, see Appendix X]

Principle VI

1. The United Nations and its relevant specialized agencies [and the International Atomic Energy Agency] [should] [shall] promote international co-operation, including technical assistance,^a and play a role of co-ordination in the area of remote sensing of [the natural resources of the earth] [and its environment].

2. States conducting activities in the field of remote sensing of [the natural resources of the earth] [and its environment] [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.^b

^aDepending on whether the Subcommittee believes that a separate principle should be developed on technical assistance.

^bThe question of application to international intergovernmental organizations will be considered later.

Principle VII

Information^c obtained by remote sensing [of the natural resources of the earth] [and its environment] indicating an impending natural disaster shall be disseminated^d as promptly as possible to those States likely to be affected.

Principle VIII^e

Taking into account the principles I and II above, remote sensing data or information derived therefrom [shall] [should] [not] be used by States [to the detriment of] [in a manner compatible with] the legitimate rights and interests of other States.

Principle IX

States participating in remote sensing [of the natural resources of the earth] [and its environment], 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 X

States [shall] [should] bear international responsibility for [national] activities of remote sensing [of the natural resources of the earth] [and its environment] [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.

Principle XI

A sensed State [shall] [should] have timely and non-discriminatory access to data obtained by remote sensing [of the natural resources of the earth] [and its environment] from outer space, pertaining to its territory on reasonable terms [to be mutually agreed upon with the sensing State] and to the extent feasible and practicable, [shall] [should] be provided with such data on such terms [on a continuous and priority basis] [and in any case no later than any third State].^f

^cSubject to later discussion of the terms "information" and "data".

^dSubject to further discussion after information concerning procedure of dissemination in the practice of the United Nations is received from the Secretariat.

^eShould 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".

^fSubject to review in the light of the discussion on access by third States.

[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 the natural resources of the earth] [and its environment] [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].]

APPENDIX XIII

(U.N. Doc. A/AC.105/218 (13 April 1978), Annex III, pp. 5-8)

DRAFT PRINCIPLES ON REMOTE SENSING REPORTED BY WORKING GROUP III OF THE LEGAL SUBCOMMITTEE AT ITS 1978 MEETING

Principle I¹

For the purposes 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.

¹The question of the introduction of these definitions into the texts of the principles is to be considered later.

²The question of the application of these principles to international intergovernmental organizations will be considered later.

³The 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.

⁴This 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".

* (c) The term "[analysed] information" 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 co-operation 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 co-operation, the particular needs of the developing countries.

Principle III

Remote sensing of the earth from outer space [shall] [should] be conducted 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.

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 elements. . . .

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 the 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

Data and/or information obtained by remote sensing of the earth indicating an impending natural disaster shall be disseminated as promptly as possible to those States likely to be affected.

Principle IX¹

Taking into account the principles I and II above, remote sensing data or information derived therefrom [shall] [should] [not] be used by States [to the detriment of] [in a manner compatible with] the legitimate rights and interests of other States.

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.

Principle XII

A sensed State [shall] [should] have timely and non-discriminatory access to data obtained by remote sensing of the earth from outer space, pertaining to its territory on

¹Should 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."

reasonable terms [to be mutually agreed upon with the sensing State] and to the extent feasible and practicable, [shall] [should] be provided with such data on such terms [on a continuous and priority basis] [and in any case no later than any third State].²

Principle XIII

[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 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 XIV

[[A State which intends to conduct remote sensing of the earth from outer space shall give advance notification to the States whose territory will be sensed.] [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 XV

[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 XVI

[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.]

²Subject to review in the light of the discussion on access by third States.

Principle XVII

[Any dispute that may arise with respect to the application of 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 procedures for the peaceful means of settlement of disputes mutually agreed upon by the parties concerned.]

APPENDIX XIV

(U.N. Doc. A/AC. 105/240 (10 April 1979), Annex I, pp. 12 and 13)

WORKING PAPERS SUBMITTED TO WORKING GROUP III OF
THE LEGAL SUBCOMMITTEE AT ITS 1979 SESSION

Union of Soviet Socialist Republics: working paper
(WG. III (1979)/WP. 1/Rev. 1)

Principle XVI

1. The freedom to disseminate primary data and analysed information obtained by remote sensing of the earth shall be limited to the extent of the provisions of paragraph 2 of this article.

2. Every State is recognized to have the right to declare that certain types of primary data and analysed information obtained by remote sensing of the earth with respect to its territory may be published or given to third States or natural or juridical persons of third States only with the express consent of the State making such a declaration. The declaration may relate to primary remote-sensing data with a spatial resolution of 50 metres or finer and to analysed remote-sensing information obtained on the basis of such data. The dissemination of primary data and analysed information obtained by remote sensing of the earth with respect to the territory of a State making such a declaration may be carried out only if the conditions stated in the declaration are observed.

3. The declaration referred to in paragraph 2 shall be transmitted to the Secretary-General of the United Nations, who shall publish it for general information.

Union of Soviet Socialist Republics: working paper
(WG. III (1979)/WP. 3)

Principle XIV

Each State undertakes to communicate a list of States about whose territory they have received primary remote sensing data from space objects. Those States shall be

given the opportunity, under mutually acceptable conditions, to familiarize themselves with such data relating to their territory. The transfer to States of primary remote sensing data about their territory may be effected by mutual agreement between those States and the State which receives such data from space objects.

Romania: working paper
(WG: III (1979)/WP. 6)

[This working paper was later submitted to the Sub-Committee as document A/AC. 105/C.2/L.122 and is reproduced in annex IV to its report.]

United States of America: working paper
(WG. III (1979)/WP. 7)

Principle XIV

A State conducting remote sensing programmes should furnish the Secretary-General of the United Nations with information describing to the extent feasible the nature of the programme and the geographic area covered. The Secretary-General should publish information thus received. A State conducting remote sensing programmes should also furnish such information as soon as practicable directly to any State which so requests. To the extent feasible and practicable, a State which intends to conduct remote sensing programmes should give advance notification of such a programme to the Secretary-General.

Romania: working paper
(WG. III (1979)/WP. 8)

[This working paper was later submitted to the Sub-Committee as document A/AC. 105/C. 2/L. 123 and is reproduced in annex IV to its report.]

Union of Soviet Socialist Republics: working paper
(WG. III (1979)/WP. 9)

Principle I (a)-Alternative text

The term "remote sensing of the earth from outer space" means observations and measurements of energy and polarization characteristics of self-radiation and reflected radiation of elements of the land, ocean and atmosphere of the earth in different ranges of electromagnetic waves which facilitate the location, description of the nature and temporal variations of natural parameters and phenomena, natural resources of the earth, the environment as well as anthropogenic objects and formations.

Iraq: working paper
(WG. III (1979)/WP. 11)

Principle VIII

Data and/or information obtained by remote sensing of the earth concerning a natural disaster shall be disseminated as promptly as possible to those States affected or likely to be affected.

APPENDIX XV

(U.N. Doc. A/AC. 105/240 (10 April 1979), Annex I, pp. 7-11)

DRAFT PRINCIPLES ON REMOTE SENSING REPORTED BY
WORKING GROUP III OF THE LEGAL SUBCOMMITTEE AT ITS
1979 SESSION

Principle I¹

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" 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.

¹The content, definition and necessity of the term "analysed information" is still to be clarified.

²The question of the application of these principles to international intergovernmental organizations will be considered later.

³The 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.

⁴This 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".

Principle II

Remote sensing of the earth from outer space and international co-operation 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 conducted 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.

Principle IV

1. States carrying out programmes for remote sensing of the earth from outer space [should] [shall] promote international cooperation 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 elements. . . .

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 the 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 cooperation, 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

Data and/or information obtained by remote sensing of the earth indicating an impending natural disaster shall be disseminated as promptly as possible to those States likely to be affected [all States, priority being given to those likely to be affected].

[This provision shall also apply to data and/or information obtained by remote sensing during and after natural disasters, in order to help affected States combat such disasters.]

Principle IX¹

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. *,**

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.]

¹Some delegations were of the view that, for the sake of consistency it was necessary to consider this principle in the light of draft principles 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".

³Should 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".

Principle XII

A sensed State [shall] [should] have timely and non-discriminatory access to data obtained by remote sensing of the earth from outer space, pertaining to its territory on reasonable terms [to be mutually agreed upon with the sensing State] and to the extent feasible and practicable, [shall] [should] be provided with such data on such terms [on a continuous and priority basis] [and in any case no later than any third State].²

Principle XIII

[[A State which intends to conduct remote sensing of the earth from outer space shall give advance notification to the States whose territory will be sensed.] [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 cooperation, 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 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

²Subject to review in the light of the discussion on access by third States.

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 procedures for the peaceful means of settlement of disputes mutually agreed upon by the parties concerned.]*

*This principle should be reviewed in the light of the full set of agreed principles, and a decision on the legal nature of the principles.