COMMENTS

The Implications of National Security Safeguards on the Commercialization of Remote Sensing Imagery

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I. INTRODUCTION

In March 1994, the Clinton Administration announced its policy to allow American companies to sell remote sensing imagery to the public and foreign entities.[1] The Clinton policy is but one of the legal instruments governing the sale and preparation of remote sensing imagery. It attempts to modernize the United States regulatory scheme to allow United States companies to compete effectively in an increasingly competitive market.[2] The policy goals are especially significant because growth in the technological development of remote sensing imagery has outpaced the policies and regulations governing it. The United States has been attempting, since the 1970s, to create a legal framework, domestically and internationally, that provides the private sector with a stable and comprehensive regulatory scheme. With such a scheme in place, the private sector will have the incentive and support necessary to justify the substantial expenses and risks associated with private space ventures.[3]

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1. *U.S. Deputy Secretary of Commerce David J. Barram Announces Administration's New Policy on Remote Sensing Space Capabilities*, U.S. DEP'T COM. NEWS (Office of the Secretary, U.S. Dep't of Commerce), Mar. 10, 1994, at 1 [hereinafter *Policy Release*] (on file with the *Seattle University Law Review*).

2. *See U.S. Policy on Foreign Access to Remote Sensing Space Capabilities: Fact Sheet*, U.S. DEP'T COM. NEWS (Office of the Secretary, U.S. Dep't of Commerce), Mar. 10, 1994, at 1 [hereinafter *Fact Sheet*] (on file with the *Seattle University Law Review*).

3. *See* POLICY AND LEGAL ISSUES INVOLVED IN THE COMMERCIALIZATION OF SPACE: STUDY PREPARED FOR THE COMM. ON COMMERCE, SCIENCE, AND TRANSPORTATION, 98th Cong., 1st Sess. 32-41 (1983); *see also Commercial Remote Sensing in the Post-Cold War Era: Joint Hearing Before the Comm. on Science, Space, and Technology and the Permanent Select Comm. on*

The demand for remote sensing imagery is increasing, and the projected growth of the market of high-resolution imagery is very promising.[4] With the growth of a civilian market for remote sensing imagery comes national security concerns. In order to alleviate these concerns, the policies and laws governing remote sensing incorporate national security safeguards that are intended to protect United States national security interests by preventing the imagery and technology of remote sensing from falling into the wrong hands.[5]

These restrictions, embedded in every legal instrument that relates to remote sensing, led to a formalized regime that restricts the sale of remote sensing imagery and fails to provide a clear legal standard for the manner in which these restrictions will be applied and triggered. Consequently, legal risk and uncertainty are created, thereby weakening the competitive position of United States companies. In a highly competitive market, these restrictions put United States companies at a disadvantage, and they might be self-defeating and obsolete.

This Comment offers a critique of the national security restrictions contained in the United States policy and regulations and the uncertainty they inject into the commercialization of remote sensing imagery. After providing a brief technical description of remote sensing technology and the market realities associated with remote sensing imagery, this Comment analyzes the legislation and regulations affecting the private sector's commercialization and dissemination of remote sensing imagery with a special emphasis on national security concerns. Specifically, it reviews the Clinton Administration's policy with regard to the commercialization of remote sensing imagery, tracing its origins to the international obligations of the United States and various domestic legislative enactments. In addition, this Comment analyzes the reasons behind the inclusion of national security safeguards in the policy and the effects these safeguards have on the private sector. Further, drawing on lessons from the current export control regime, this Comment critiques the policy from a legal and economic viewpoint. Finally, this Comment maps the contours of a legal definition of "national security," while focusing on the reasons the policy will impede the progress of the private sector and fail to protect the interests it was designed to safeguard.

Intelligence, 103d Cong., 2d Sess. 9-12 (1994) (testimony of James H. Frey, President, Litton Itek Optical Systems) [hereinafter Testimony of Frey].

4. *See infra* section II.C.

5. *See Policy Release*, *supra* note 1, at 1.

II. REMOTE SENSING: SCIENTIFIC BACKGROUND, APPLICATIONS, AND THE MARKET

A. Definition and Technical Background

Remote sensing is "the collection of data which can be processed into imagery of surface features of the Earth from a . . . satellite."[6] On a more technical level, it means the "sensing of the Earth's surface from space by making use of . . . electromagnetic waves emitted, reflected or diffracted by the sensed objects."[7] It is performed through the interaction among a light source, such as the sun's reflected light; the earth's surface; and the atmosphere.[8] The sensing is actually done by "sensors on board a satellite which is [sic] usually placed on a low polar orbit so that it may vertically scan the Earth while the Earth is revolving around its axis."[9] It can also simply mean satellite photography with images taken by advanced photographic equipment and relayed to a ground station where the digital data is converted into imagery.[10]

The technology currently used is quite different from that used in 1972 when the United States launched the first commercially usable remote sensing satellite, LANDSAT.[11] However, the three main factors to consider when assessing the capabilities of a remote sensing system remain the same: (1) the type of sensor used, (2) the resolution

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6. 15 U.S.C.A. § 5602(5) (West Supp. 1995).

7. *Principles Relating to Remote Sensing of the Earth from Outer Space*, G.A. Res. 65, U.N. GAOR, 41st Sess., Annex IV I, Agenda Item 72, U.N. Doc. A/RES/41/65 (1986) [hereinafter *Principles*].

8. Cynthia M. Hayward, Note, *Remote Sensing: Terrestrial Laws for Celestial Activities*, 8 B.U. INT'L L.J. 157, 162 (1990).

9. Patrick A. Salin, *Proprietary Aspects of Commercial Remote-Sensing Imagery*, 13 J. INT'L BUS. 349, 349 (1992). The satellite's orbit is sun-synchronous, which means that the satellite is constantly interposed between the sun and the earth to ensure that the satellite is always taking the images during daytime. Robert J. Aamoth, Esq., *From Landsat to Mediasat: The Development of Remote-Sensing Technology and the First Amendment Right of the Press to Use That Technology for News Reporting*, in 2 AMERICAN ENTERPRISE, THE LAW, AND THE COMMERCIAL USE OF SPACE 1, 1-2 & n.2 (Phillip D. Mink, Esq., ed., 1986).

10. *See* Gary M. Kramer, *The First Amendment Viewed from Space: National Security Versus Freedom of the Press*, 14 ANNALS AIR & SPACE L. 339, 341 (1989); George E. Seay, III, Comment, *Remote Sensing: The Media, the Military, and the National Security Establishment—A First Amendment Time Bomb*, 59 J. AIR L. & COM. 239, 243 (1993).

11. Kramer, *supra* note 10, at 341. For additional information on LANDSAT, the Land Remote Sensing Satellite, see *infra* text accompanying note 45.

of the images, and (3) the altitude of the orbit. The three principal types of sensors used are film, electro-optical, and radar.[12]

Despite the high quality images provided by the film sensor, it requires a large, heavy lens that makes it expensive to launch. In addition, the film has to be retrieved either from the ejected film capsule or by retrieving the satellite itself.[13] Once the satellite runs out of film, it becomes useless.[14] Electro-optical technology, introduced in the early eighties, helped solve many of the problems associated with the film sensor. The information collected through this process is assigned a digital value that is transmitted to a ground station where it is reconstructed.[15] The technology allows the information to be transmitted and reconstructed into high-quality images at almost real time.[16] Finally, space-based radar systems allow satellites to capture images in all types of weather by actively emitting microwave pulses that penetrate clouds, and they work at any hour.[17]

Remote sensing image quality is determined by its resolution, which measures the area clearly discernible from a remotely sensed photograph.[18] The term resolution varies in definition in relation to the technology used. In other words, resolution in an electro-optical sensor is different from resolution in a film sensor.[19] In this Comment, resolution corresponds to the size of the smallest discernible object in the photograph.

The altitude of the orbit is also very important because the lower the altitude, the better the ground resolution.[20] However, lower orbit leads to a narrow breadth of vision.[21] This important factor distinguishes military and reconnaissance oriented satellites from commercial

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12. Ann M. Florini, *The Opening Skies: Third-Party Imaging Satellites and U.S. Security*, 13:2 INT'L SECURITY 91, 93 (1988).

13. *Id.* at 93.

14. *Id.*

15. *Id.* A grid of many tiny light-sensitive sensors called pixels, each measuring the electromagnetic radiation from a corresponding area on the ground, form the whole image which in turn is assigned a digital value and transmitted instantly to the ground station on earth. *Id. See generally Kosta Tsipis, Arms Control Pacts Can Be Verified*, DISCOVER, Apr. 1987, at 79, 80-93.

16. Florini, *supra* note 12, at 93-94.

17. *Id.* at 96-97. The problems with space-based radar are that they require a great deal of energy and are expensive. *Id.* at 97.

18. *Id.* at 94. For example, an object as small as 100 meters square can be discerned using a satellite with a 100-meter resolution, while a 30-meter resolution satellite can resolve an object as small as 30 meters square. Kramer, *supra* note 10, at 341.

19. For an excellent explanation of the technical aspects of resolution, see Florini, *supra* note 12, at 94-96.

20. *Id.* at 94-95.

21. *Id.* at 94.

satellites: narrow vision lowers the commercial value of the image, makes it unattractive for commercial users, and shortens the life of the satellite.[22]

B. Applications and Uses

The origins of remote sensing imagery are rooted in the military and intelligence establishment.[23] Operation Desert Storm demonstrated the importance of remote sensing imagery on battlefields.[24] However, the use of remote sensing imagery reaches far beyond military operations and espionage. The potential uses and benefits of remote sensing imagery are endless, ranging from environmental monitoring to agriculture, cartography, and land use.[25]

Demand for space-based imagery is growing tremendously in light of its various uses. Bangladesh used remote sensing to recognize the process of land accretion occurring in the Bay of Bengal, enabling it to extensively plan the use and development of the new land,[26] and Brazil used the data to map the tributaries of the Amazon River.[27] The United States and the former Soviet Union used remote sensing to monitor compliance with arms treaties.[28] The French commercial

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22. *Id.* at 110. For instance, LANDSAT has an orbit of 916.6 kilometers. For statistical data on LANDSAT, see Glossary of Remote Sensing Terminology and Acronyms at http://www.seaspace.com/glossary.html. Surveillance satellites orbit at an altitude between 200 and 500 kilometers, while civilian satellites orbit at an altitude between 500 and 1,000 kilometers. Florini, *supra* note 12, at 94-95.

23. During the Cold War, the United States and the Soviet Union designed remote sensing satellites to collect images of each other's territory. *See* Florini, *supra* note 12, at 109-10.

24. William O. Studeman, *The Space Business and National Security; an Evolving Partnership*, AEROSPACE AM., Nov. 1994, at 24; *see* Craig Covault, *Space Recon of Iraq Taxes CIA Operations*, AVIATION WK. & SPACE TECH., Sept. 3, 1990, at 30. During Desert Storm, Scud launches were detected by satellite and warnings were relayed to theatre commanders. Remote sensing systems provided data for mission planning of air and ground forces. *See Testimony May 02, 1995 Dr. Scott Pace RAND Corporation Senate Armed Services Strategic Forces Military Space Program*, Fed. Document Clearing House, May 2, 1995, *available in* LEXIS, News Library, Curnws File.

25. MICHAEL HARR & RAJIV KOHLI, COMMERCIAL UTILIZATION OF SPACE: AN INTERNATIONAL COMPARISON OF FRAMEWORK CONDITIONS 5-6 (1990).

26. Stephen E. Doyle, *Remote Sensing by Satellite: Technical and Operational Implications for International Cooperation*, *in* LEGAL IMPLICATIONS OF REMOTE SENSING FROM OUTER SPACE 3, 8 (Nicholas M. Matte & Hamilton DeSaussure eds., 1976).

27. Jefferson H. Weaver, *Lessons in Multilateral Negotiations: Creating a Remote Sensing Régime*, 7 TEMP. INT'L & COMP. L.J. 29, 34 (1993).

28. *See* Mark E. Brender, *New Technologies in Newsgathering: Remote Sensing and the First Amendment*, *in* WIRING THE CONSTITUTION: THE NEW MEDIA IN AN INFORMATION AGE 11, 12 Richard T. Kaplar ed., (1987). For other examples of remote sensing imagery uses, see Lawrence W. Morley, *Remote Sensing Satellites—What Do They Actually Measure and How Sensitive is the Information*, *in* LEGAL IMPLICATIONS OF REMOTE SENSING FROM OUTER SPACE 13, 13-18 (Nicholas M. Matte & Hamilton DeSaussure eds., 1976).

remote sensing system, SPOT (Satelliles Pour l'Observation de la Terre), provided detailed images of the Chernobyl disaster. SPOT's imagery also aided in the search for the remains of twenty-eight passengers unaccounted for in the crash of Pan American Flight 103 over Scotland in 1988,[29] and it provided help to Thailand in tracking and mapping clandestine opium fields.[30] Remote sensing imagery also played a vital role in firefighters' efforts to combat the raging fires in Yellowstone National Park in the summer of 1988.[31] Recently, images of Muslim prisoners huddled in a military soccer field prior to their mass executions Serbian military forces were taken by an American reconnaissance satellite and presented as evidence to the United Nations Security Council.[32] Additionally, space-based imagery has proven to be a very important tool in the hands of the media.[33]

C. *The Market and Foreign Competition*

The decline in defense budgets has created economic incentives for private industry to enter the high-resolution imagery market.[34] While the market for space-based imagery is projected to reach from $5 to $15 billion by the turn of the century,[35] governments and private companies interested in entering the market of remote sensing imagery will have to battle in a fiercely competitive world market. Systems such as LANDSAT and the French system SPOT have cornered the market by being, since the seventies, the main sources for remote sensing imagery for the media and other commercial users.[36]

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29. Hamilton DeSaussure, *Remote Sensing Satellite Regulation by National and International Law*, 15 RUTGERS COMPUTER & TECH. L.J. 351, 352 (1989).

30. *See* Salin, *supra* note 9, at 350.

31. Kramer, *supra* note 10, at 342. For a discussion of the uses of remote sensing, see Richard J. West, *Copyright Protection for Data Obtained by Remote Sensing: How the Data Enhancement Industry Will Ensure Access for Developing Countries*, 11 J. INT'L L. & BUS. 403, 405 (1990).

32. Michael Dobbs & R. Jefferey Smith, *Spy Planes Over Bosnia Show More Mass Graves*, SEATTLE TIMES, Oct. 29, 1995, at 4.

33. *See* Kramer, *supra* note 10, at 342. Satellite imagery was used by American television networks in 1986 to reveal the Chernobyl nuclear disaster and the construction of Libyan missile sites. Additionally, ABC News used satellite imagery to follow developments in the Iran/Iraq war. *Id.* at 342-43.

34. Theresa M. Foley, *Zooming in on Remote Sensing Markets*, AEROSPACE AM., Oct. 1994, at 22; *see also* Testimony of Frey, *supra* note 3, at 112.

35. For a pessimistic forecast of the market, see John D. Morrocco, *Lawmakers Warn Clinton on Satellite Imagery Sales*, AVIATION WK. & SPACE TECH., Nov. 22, 1993, at 38.

36. *See* HARR & KOHLI, *supra* note 25, at 27; *see also* Kramer, *supra* note 10, at 340-41.

Although remote sensing technology was originally developed by the United States and the former Soviet Union for defense planning and intelligence gathering, the current market has many players.[37] The Russian government is allowing two Russian companies to sell 2-meter resolution images[38] and has set up a center for the sale and dissemination of commercial satellite data.[39] Additionally, Russian industrial representatives are planning on marketing 0.75-meter imagery in the near future, while offering turn-key remote sensing systems and technological know-how to foreign entities.[40] France's semi-private SPOT is one of the leaders in the sale of space-based imagery,[41] and France is expanding its ventures with the launching of Helios-1A in July 1995.[42] Helios-1A's technology and 1-meter resolution imagery are expected to be offered to commercial entities by the end of the decade.[43] Russia and France are not alone in the market; they are being joined by Japan, China, Korea, Germany, Israel, Canada, the European Space Agency, and India.[44]

In the United States, remote sensing imagery is produced by three sectors. The first is a governmental civil sector known as LANDSAT, which provides low and moderate resolution imagery for different purposes.[45] LANDSAT is operated by EOSAT (The Earth Observa-

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37. Vipin Gupta, *New Satellite Images for Sale*, 20:1 INT'L SECURITY 94, 94 (1995).

38. *Id.* at 98.

39. Nagornyy Karabakh, *Centre Set Up for Commercial Sale of Satellite Data*, BBC SUMMARY OF WORLD BROADCASTS, Oct. 2, 1995, *available in* LEXIS, News Library, Curnws File.

40. Studeman, *supra* note 24, at 28; *see also Commercial Imagery: Hearing Before the Select Comm. on Intelligence*, 103d Cong., 1st Sess. 11 (1993) (statement of Sam Araki, Executive Vice President, Lockheed Missiles and Space Co.) [hereinafter Statement of Araki].

41. Gupta, *supra* note 37, at 95, 99-100; *see* Hugh De Santis, *Commercial Observation Satellites and Their Military Implications: A Speculative Assessment*, 12 WASH. Q., Summer 1989, at 185, 185. SPOT offers imagery with 10 to 20-meter resolution. Gupta, *supra* note 37, at 95.

42. Vanessa Houlder, *A Higher Resolution - The Commercial Uptake of Data from Observation Satellites Is About to Take Off*, FIN. TIMES, July 27, 1995, at 13, *available in* LEXIS, News Library, Curnws File; *see* Studeman, *supra* note 24, at 28.

43. Gupta, *supra* note 37, at 100 n.8.

44. *Prepared Testimony of Keith Calhoun-Senghor, Director, Office of Air & Space Commercialization, U.S. Department of Commerce Before the Subcommittee on Science, Technology and Space, Committee on Commerce, Science, and Transportation, United States Senate*, FED. NEWS SERVICE, Mar. 1, 1995, *available in* LEXIS, News Library, Curnws File, [hereinafter Testimony of Calhoun-Senghor]; Roger B. Lindscott, *Commercializing Spy-Satellite Technology Should Be a Boom to Photonics Industry*, PHOTONICS SPECTRA, Apr. 1994, at 50; *see also* HARR & KOHLI, *supra* note 25, at 35-63; *ISRO Announces Schedule for Three Major Programmes*, BBC SUMMARY OF WORLD BROADCASTS, Oct. 4, 1995, *available in* LEXIS, News Library, Curnws File.

45. OFFICE OF TECHNOLOGY ASSESSMENT, U.S. CONGRESS, REMOTE SENSING AND THE PRIVATE SECTOR: ISSUES FOR DISCUSSION - A TECHNICAL MEMORANDUM 9, 94 (1984) [hereinafter TECHNICAL MEMORANDUM]; Hayward, *supra* note 8, at 166; Kunihiku Tatsuzawa, *Policy and Law in Space Commercialization*, *in* LEGAL ASPECTS OF SPACE COMMERCIALIZATION

tion Satellite Company), which is a joint venture between RCA Corporation and Hughes Aircraft Company under the supervision of the National Aeronautics and Space Administration (NASA) and The National Oceanic and Atmospheric Administration (NOAA). The second is a governmental military sector, which provides highly classified imagery for military and intelligence purposes.[46] This governmental military sector is operated by the Department of Defense and the Central Intelligence Agency. The third is a non-governmental commercial sector owned and operated by private companies.[47] Because the United States is one of the largest markets for remote sensing imagery, several United States companies have undertaken remote sensing ventures.[48] Companies like WorldView Imaging, Lockheed Missiles and Space Company, Orbital Sciences, OrbView, and EarthWatch have been granted licenses to operate remote sensing systems.[49] These systems are highly advanced and technologically sophisticated, with resolutions varying between 8 and 1-meter.[50] The remainder of this Comment will focus on non-governmental commercial systems and the regulations affecting them.

With so much at risk in commercial space activities, remote sensing companies are looking for certainty while facing fierce competition. Their competitiveness and leadership in this vastly expanding market is determined by their ability to develop highly innovative technology at an attractive price and operate in a system where risk is minimized and their rights protected.

III. INTERNATIONAL SPACE LAW: TREATIES, PRINCIPLES, AND CUSTOMS

As the exploration of outer space potentials grew, the international community reacted by promulgating several treaties and principles to regulate governmental and commercial activities in space. Through the United Nations' Committee on Peaceful Uses of Outer Space (COPUOS), the international community conceived several major space treaties and norms. The three most relevant international instruments pertaining to commercial remote sensing activities are: (1)

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11 (Kunihiku Tatsuzawa ed., 1992).

46. TECHNICAL MEMORANDUM, *supra* note 45, at 93-94.

47. *Id.*

48. *See* HARR & KOHLI, *supra* note 25, at 58-59.

49. Foley, *supra* note 34, at 22. From 1994 to 1995, five operators were granted licenses for the operation of commercial remote sensing systems. Testimony of Calhoun-Senghor, *supra* note 44.

50. *See* Gupta, *supra* note 37, at 104-05.

the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (known as the Outer Space Treaty of 1967);[51] (2) the Convention on International Liability for Damage Caused by Space Objects (known as the Liability Convention);[52] and (3) the United Nations' General Assembly resolution adopting the Principles Relating to Remote Sensing of the Earth from Outer Space (known as Resolution 41/65).[53]

The first two treaties have been signed and ratified by the United States, thus becoming binding obligations. Resolution 41/65, a General Assembly resolution, is not legally binding.[54] However, Resolution 41/65[55] has been considered by many as a restatement of the obligations enunciated by the Outer Space Treaty of 1967 and the Liability Convention, and it is regarded by some as a crystallization of some customary international space norms.[56]

These treaties and principles draw the contours of commercial remote sensing space activities and outline the United States' international obligations and duties. However, these documents are not self-executing; thus, they require domestic implementation of a regulatory scheme that ensures compliance.[57] In other words, domestic regulations on space activities, whether commercial or governmental, must be enacted and must conform to international law.

A. The Outer Space Treaty of 1967 and the Liability Convention

With its seventeen articles, the Outer Space Treaty of 1967 provides the international framework for the commercialization of space.[58] Concerned with the "exploration and use" of outer space, the Treaty recognizes and emphasizes the need to use outer space for the "common interest of all mankind" and for the "benefit of all peoples irrespective of the degree of their economic and scientific develop-

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51. Jan. 27, 1967, 18 U.S.T. 2410 [hereinafter Outer Space Treaty].

52. Mar. 29, 1972, 24 U.S.T. 2389 [hereinafter Liability Convention].

53. *See supra* note 7. For the resolution establishing the Committee on the Peaceful Uses of Outer Space (COPUOS), see G.A. Res. 1472, 12 Dec. 1959.

54. *See* U.N. CHARTER, ch. IV, art. 10-11, *reprinted in* [1959] Y.B. 542-43.

55. Resolution 41/65 was adopted unanimously and without a formal vote. *See* 1959 U.N.Y.B. 24-28.

56. CARL Q. CHRISTOL, SPACE LAW: PAST, PRESENT, AND FUTURE 90-94 (1991) [hereinafter CHRISTOL, SPACE LAW]; *see* Tatsuzawa *supra* note 45, at 23.

57. *See* Fred Kosmo, Note, *The Commercialization of Space: A Regulatory Scheme that Promotes Commercial Ventures and International Responsibility*, 61 S. CAL. L. REV. 1055, 1065 (1988); *see also* CHRISTOL, SPACE LAW, *supra* note 56, at 368-69.

58. *See* Outer Space Treaty, *supra* note 51, at 2410-21.

ment."[59] The first five articles stress the importance of the use and exploration of outer space for peaceful purposes, reject national appropriation claims on outer space, and invite cooperation and understanding in accordance with international law and the United Nations Charter.[60]

Articles VI and IX are the most relevant to private commercial activities in space. Article VI states:

> States Parties to the Treaty shall bear international responsibility for national activities in outer space, including the moon and other celestial bodies, whether such activities are carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with provisions set forth in the present Treaty. The activities of non-governmental entities in outer space . . . shall require authorization and continuing supervision by the appropriate State Party to the Treaty. . . .[61]

Thus, Article VI is relevant, first, because it imposes on the United States an international responsibility for activities, including remote sensing, undertaken by private entities.[62] It also imposes a duty on the United States to establish a regulatory scheme that ensures national supervision of the activities to be carried out in conformity with international legal norms.[63]

Second, Articles VI and IX, through their references to "non-governmental entities" and "nationals," recognize, at least implicitly, the right of private entities to participate in the use and exploration of outer space.[64] The recognized right to participate coupled with the international responsibility clause was the result of a compromise between the Soviet Union, which believed that private entities should be banned from conducting space activities, and Western states, which

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59. *Id.* at 2411.

60. *See id.* at 2412-14.

61. *Id.* at 2415.

62. *See id.* The concept of international responsibility refers to duties of states toward each other in relation to international and transboundary events, such as space activities. CHRISTOL, SPACE LAW, *supra* note 56, at 240. For example, a collision between two satellites would invoke international responsibility. *Id.*

63. *See* Outer Space Treaty, *supra* note 51, at 2415.

64. *See id.* at 2415-17 (Articles VI and IX); *see also* Roger K. Hoover, *Law and Security in Outer Space from the Viewpoint of Private Industry*, 11 J. SPACE L. 115, 116-17 (1983). Article IX states in part: "If a State Party to the Treaty has reason to believe that an activity or experiment planned by it or its nationals in outer space . . . would cause potentially harmful interference with activities of other States Parties . . . , it shall undertake appropriate international consultations before proceeding with any such activity or experiment." Outer Space Treaty, *supra* note 51, at 2416-17.

advocated the right of private entities to conduct commercial ventures in space.[65]

The concept of international responsibility enunciated in the Outer Space Treaty of 1967 was reaffirmed in the Liability Convention. Under the Convention, the launching nation is absolutely liable for damage caused on the surface of the Earth.[66] It is important to note that a claim cannot be brought by a private entity or a citizen of another nation; the Convention gives only nations the right and the power to bring an action against the nation causing the damage.[67] The Liability Convention covers damages resulting from the "loss of life, personal injury or other impairment of health; or loss of or damage to property of States or of persons, natural or juridical."[68]

Although the Outer Space Treaty of 1967 and the Liability Convention do not specifically deal with remote sensing, they formed the basis upon which the principles of Resolution 41/65 were enacted. More importantly, they established the international legal framework for the United States to follow and implement.

B. Resolution 41/65

It took COPUOS almost seventeen years to reach a consensus among nations on the principles governing remote sensing.[69] Although the issue of remote sensing was first raised at the First United Nations Conference on the Peaceful Uses of Outer Space in Vienna in 1968,[70] the Legal Subcommittee of COPUOS did not start formulating the rules governing remote sensing until Argentina submitted a formal draft proposal on the rules in 1970.[71] The goal of COPUOS was to reach a binding treaty on remote sensing.[72] However, the document agreed upon was submitted to the General Assembly to be voted on as a non-binding resolution in 1986.[73]

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65. NATHAN C. GOLDMAN, AMERICAN SPACE LAW: INTERNATIONAL AND DOMESTIC 72 (1988).

66. Liability Convention, *supra* note 52, at 2392-93 (Articles II and IV). A launching state is defined, in Article I (c)(ii), as "[a] State from whose territory or facility a space object is launched." *Id.* at 2392.

67. *See id.* at 2395 (Articles VII and VIII). A claim for damages will be resolved through diplomatic channels or the courts of the state liable for the damages or, if the dispute cannot be resolved through those channels, through the International Court of Justice. *Id.*

68. *Id.* at 2392 (Article I).

69. DeSaussure, *supra* note 29, at 356 (Part I).

70. *Id.* at 354.

71. *Id.*

72. *See* Weaver, *supra* note 27, at 35.

73. *Id.*; *see supra* text accompanying note 55.

The clash between sovereign rights and freedom of outer space presented major disagreements and disputes that hampered the progress of formulating remote sensing guidelines. The problems revolved around two major issues: (1) the necessity of prior consent or consultation, and (2) the right to access and disseminate remote sensing data.[74] Many lesser developed countries, especially Latin American nations, argued that because they have permanent sovereignty over their natural wealth and resources, they also have a sovereign right to information concerning those resources.[75] Hence, they argued that before any data or information can be collected through remote sensing, they have a right to be consulted and a right to either grant or deny approval.[76] The United States opposed these views and argued that the Outer Space Treaty, especially Article I, and customary international practice establish the freedom of space and support the policy of "open skies" long advocated by the United States.[77]

The United States advocated the position that any limitations on the right to acquire and disseminate data would be a violation of the Universal Declaration of Human Rights, which provides for the freedom to "seek, receive and impart information and ideas through any media . . . regardless of frontiers."[78] Therefore, the right of the "sensed state" to obtain priority access to data generated in its territories and the right to have a final decision regarding the dissemination of the data to a third party were focal issues long disputed and argued.[79]

In the midst of these disputes, Resolution 41/65 emerged, reaffirming the right of non-governmental entities to participate in space activities and the obligation of nations to authorize and supervise

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74. DeSaussure, *supra* note 29, at 354-55; *see also* CHRISTOL, SPACE LAW, *supra* note 56, at 76-83.

75. *See* CHRISTOL, SPACE LAW, *supra* note 56, at 75; *see also* Aldo A. Cocca, *Remote Sensing of Natural Resources by Means of Space Technology: A Latin American Point of View*, *in* LEGAL IMPLICATIONS OF REMOTE SENSING FROM OUTER SPACE 63, 63-68 (Nicholas M. Matte & Hamilton DeSaussure eds., 1976). These resources include minerals, forests, water resources, and other natural resources.

76. *See* The Committee on the Peaceful Uses of Outer Space, *Treaty on Remote Sensing of Natural Resources by Means of Space Technology*, U.N. GAOR 1st Comm., 29th Sess., Annex, Agenda Item 32, at 4, U.N. Doc. A/C.1/1047 (1974).

77. *See* DeSaussure, *supra* note 29, at 355; *see also* CARL Q. CHRISTOL, THE MODERN INTERNATIONAL LAW OF OUTER SPACE 732-35 (1982).

78. Hayward, *supra* note 8, at 173 (quoting *Universal Declaration of Human Rights*, 217A (III), 3(1) U.N. GAOR Reg. 71, U.N. Doc. A/810 (1948)).

79. DeSaussure, *supra* note 29, at 355.

their citizens in outer space.[80] The relevance of Resolution 41/65 lies in its consensual nature and its specific focus on remote sensing. It does not solve all the problems or create a perfect certainty for commercial entities; however, it does set up non-binding guidelines for nations to follow on both international and domestic levels.

Resolution 41/65 emphasizes the concept of cooperation as a compromise between claims of national sovereignty and total freedom.[81] Resolution 41/65 also reaffirms the concept of freedom of exploration and use, rejects the prior consent and priority of access proposals, and stresses the duty to undergo remote sensing activities in compliance with international law, the Outer Space Treaty of 1967, and the Liability Convention.[82] Articles IX and XIV impose on nations the duty to comply with the principles and obligations of international law, while maintaining the concept of international responsibility enunciated in the Outer Space Treaty of 1967.[83] It is important to note that under the Resolution, sensed nations have the right to some remote sensing data on a "non-discriminatory basis and on reasonable cost terms."[84]

C. Customs and Relevant Practices

There is no question that nations have the right to engage in remote sensing activities. If this right is not sufficiently emphasized in treaty law and international instruments, it definitely finds support in customary international law.[85] The practice of nations regarding remote sensing activities reflects a widespread acceptance of freedom of space and the right to collect data. This practice is evidenced by the increasing number of governmental and non-governmental remote sensing ventures and the increased sales of collected data.[86]

Meanwhile, there are several treaties and practices not dealing directly with remote sensing and the sale of imagery that nonetheless impact the policies and rules behind the commercialization of remote sensing imagery. One of those instruments is the "Open Skies"

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80. *Principles*, *supra* note 7, at 453, 455 (Principles IV and XIV) (referring to "entities" under the jurisdiction of states, i.e. non-governmental organizations).

81. Carl Q. Christol, Introductory Note, *United Nations: Committee on the Peaceful Uses of Outer Space Draft Principles on Remote Sensing*, 25 INT'L LEGAL MATERIALS 1331, 1331-33 (1986).

82. *Id.* at 1332-33; *see Principles*, *supra* note 7, at 453 (Principles III and IV).

83. *Principles*, *supra* note 7, at 454-55.

84. *Id.* at 454 (Principle XII).

85. IAN BROWNLIE, PRINCIPLES OF PUBLIC INTERNATIONAL LAW 4 (4th ed. 1990) (discussing customary international law).

86. *See supra* section II.C.

Treaty, ratified by the Senate in 1993, which empowers the signatory nations, "regardless of their size, wealth, or level of technology—to acquire through aerial or spatial activities meaningful security information."[87] The Open Skies Treaty also adopted the principle of full territorial openness, which includes territory formerly restricted for national security reasons.[88] Such a treaty, although not oriented toward remote sensing, might play a significant and helpful role in determining the level of scrutiny private actors might be subjected to when applying for a license for the sale of remote sensing imagery and systems.

Furthermore, the United States strongly advocates the concept of nondiscriminatory access to remote sensing data. The United States policy on open dissemination of data pre-dates the launching of private remote sensing satellites.[89] The government made the data originated by LANDSAT available to the public, absent national security or public safety concerns.[90] This concept was promoted by the United States on the international level; in all relevant international organizations, including Resolution 41/65; and in all its agreements with other countries regarding remote sensing.[91] The United States incorporated this requirement domestically in its regulatory scheme, making it an essential requirement for granting licenses to private operators.[92]

There is no question that concerns over national security and national sovereignty persist on the international level. However, the principles of open skies, free dissemination of data, and the concept of space as an arena for all humankind have triumphed over nationalistic aspirations. In light of these international obligations, the United States had to create a regulatory scheme to enable it to honor its international obligations domestically and promote its domestic goals internationally.

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87. Marian Nash, *Contemporary Practice of the United States Relating to International Law*, 88 AM. J. INT'L L. 89, 98 (1994). The Open Skies Treaty was submitted to the Senate by President George Bush in 1992. *Id.* at 96.

88. *Id.* at 98.

89. *See* Eilene Galloway, *Remote Sensing from Outer Space: Legal Implications of Worldwide Utilization and Dissemination of Data*, *in* LEGAL IMPLICATIONS OF REMOTE SENSING FROM OUTER SPACE 91, 91-97 (Nicholas M. Matte & Hamilton DeSaussure eds., 1976).

90. Land Remote Sensing Policy Act of 1992, 15 U.S.C.A. § 5651(a) (West Supp. 1995); *see* Land Remote-Sensing Commercialization Act of 1984, Pub. L. No. 98-365, 98 Stat. 451 (codified at 15 U.S.C.A. §§ 4201-4292 (West Supp. 1995)), *repealed by* Land Remote Sensing Policy Act of 1992, Pub. L. No. 102-555, § 4, 106 Stat. 4166.

91. Paul F. Uhlir, Esq., *The Public International Law of Civilian Remote Sensing: An Overview*, *in* 2 AMERICAN ENTERPRISE, THE LAW, AND THE COMMERCIAL USE OF SPACE 25, 58 (Phillip D. Mink, Esq., ed., 1986).

92. 15 C.F.R. § 960.1 (1995).

IV. DOMESTIC LAWS AND POLICIES

In light of these international obligations, nations, in order to assure the success of manned and unmanned space activities, have generally adopted suitable standards in the form of legislation, administrative orders, and decrees.[93] Many countries such as Russia, France, the United Kingdom, Japan, Germany, and Canada have implemented policies in the last decade that will enable them to meet their international legal obligations, while at the same time allow them to support the efforts of their national remote sensing industries.[94] In the United States, international obligations in the area of commercial remote sensing activities were recognized through a licensing and regulatory scheme that included major national security safeguards. Legislation and regulations adopted include: The Land Remote Sensing Commercialization Act of 1984,[95] the NOAA's administrative regulations in 1987,[96] the Land Remote Sensing Policy Act of 1992,[97] and, most recently, the Clinton Administration's 1994 policy on remote sensing space capabilities.[98] In addition, several Presidential directives dealing with national space policy and the commercialization process were announced.[99] The creation of these legal schemes clearly signaled that the United States was committed to promoting the commercialization of space and emphasizing the role of private actors in the development of space technologies.

A. The Land Remote Sensing Commercialization Act of 1984 and the NOAA's Administrative Regulations

The Land Remote Sensing Commercialization Act of 1984 was a major step in the progress toward the commercialization of remote sensing imagery. It was also the culmination of several years of

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93. *See, e.g.*, Michel Bourély, *Quelques Réflexions au Sujet des Législations Spatiales Nationales*, 16 ANNALS AIR & SPACE L. 245 (1991).

94. Stephen Gorove, *Sources and Principles of Space Law*, *in* SPACE LAW: DEVELOPMENT AND SCOPE 45, 53-54 (Nandasiri Jasentuliyana ed., 1992); *see* HARR & KOHLI, *supra* note 25, at 35-63 (discussing France, the United Kingdom, Japan, and Germany); Gupta, *supra* note 37, at 98-100 (discussing France and Russia).

95. Pub. L. No. 98-365, 98 Stat. 451 (codified at 15 U.S.C.A. §§ 4201-4292 (West Supp. 1995)), *repealed by* Land Remote Sensing Policy Act of 1992, Pub. L. No. 102-555, § 4, 106 Stat. 4166.

96. 15 C.F.R. § 960 (1996).

97. 15 U.S.C.A. §§ 5651-5672 (West Supp. 1995).

98. *See Policy Release*, *supra* note 1.

99. *See infra* text accompanying notes 101-105.

commitment to bring the private sector into the outer space arena.[100] The commercialization of space was a prime goal during the Carter Administration, as demonstrated by its Directive on National Space Policy and the assignment of LANDSAT's operations to the National Oceanic and Atmospheric Administration (NOAA) of the Department of Commerce.[101] Under pressure from the intelligence community, President Carter restricted the resolution capabilities of remote sensing systems to 10-meter.[102] During the Reagan Administration, however, the process of commercialization picked up steam. President Reagan announced his commitment to expand private sector investment and involvement in space activities[103] and to commercialize LANDSAT.[104] Furthermore, a 1982 statute directed the Secretary of Commerce to "plan for the transfer of the ownership and operation of civil operational land remote sensing satellite systems to the private sector when in the national interest."[105]

Congress got in the game by enacting the Land Remote Sensing Commercialization Act of 1984 (1984 Act). The 1984 Act was aimed at transferring responsibility of LANDSAT 4 and subsequent systems from the NOAA to the private sector.[106] The significance of the 1984 Act lies in the way it deals with the selling and marketing of the imagery produced by LANDSAT and its provisions on licensing procedures and rules.[107] The 1984 Act puts the responsibility of running and licensing private remote sensing systems in the hands of the Secretary of Commerce, who by statute must consult with the

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100. CHRISTOL, SPACE LAW, *supra* note 56, at 3570.

101. *See* White House Press Release (Declaration of a Presidential Directive on National Space Policy) (June 20, 1978), *in* SPACE LAW: SELECTED BASIC DOCUMENTS 558 (Committee on Commerce, Science, and Transportation ed., 2d ed. 1978); The White House Fact Sheet: U.S. Civil Space Policy (Oct. 11, 1978), *in* SPACE LAW: SELECTED BASIC DOCUMENTS 561 (Committee on Commerce, Science, and Transportation ed., 2d ed. 1978). For a further explanation on the policy and directives, see President's Announcement of Administration Review, 1 PUB. PAPERS 1135-37 (June 20, 1978).

102. *See* Tony Mauro, *The Puzzling Problems of Pictures from Space*, WASH. JOURNALISM REV., June 1986, at 15, 17.

103. *See* Fact Sheet Outlining United States Space Policy, 2 PUB. PAPERS 895 (July 4, 1982).

104. *See* TECHNICAL MEMORANDUM, *supra* note 45, at 6.

105. National Aeronautics and Space Administration Authorization Act, Pub. L. No. 97-324, § 201(a), 96 Stat. 1597, 1601 (codified at 15 U.S.C.A. § 1517 (West 1982 & Supp. 1995)).

106. Land Remote-Sensing Commercialization Act of 1984, Pub. L. No. 98-365, §§ 102, 103, 202, 98 Stat. 451 (codified at 15 U.S.C.A. §§ 4201-4292 (West Supp. 1995)), *repealed by* Land Remote Sensing Policy Act of 1992, Pub. L. No. 102-555, § 4, 106 Stat. 4166.

107. *Id.* §§ 202, 302.

Secretary of Defense on national security matters and with the Secretary of State on matters involving international obligations.[108]

Following the 1984 Act, the NOAA held hearings to determine how the government should license private remote sensing systems.[109] Although the transfer of LANDSAT to a private venture, EOSAT, faced some problems,[110] the NOAA continued the process of promulgating regulations on how and under what conditions a license can be granted as provided for under Title IV of the 1984 Act.[111] National security, as in previous directives and policies, remained the most important goal and objective of the regulations.[112] Despite this emphasis, however, the regulations were intended to favor commercialization and encourage nondiscriminatory access to data.[113] The regulations provide (1) pre-application consultation procedures for applicants in order to reveal design or data collection requirements and avoid costly changes,[114] and (2) the possibility of a formal hearing if a license application is denied.[115]

While the 1984 Act and its associated regulations raised the hopes of private actors, the directives and policies of the late 1980s gave national security a renewed emphasis. Such an emphasis was clearly manifested in a Presidential directive in 1988.[116] Although the 1988 directive lifted the 10-meter resolution restriction, it put the private sector in an uncertain position regarding when and how the national security safeguards included in the 1984 Act and the associated regulations would be invoked.[117] The directive, however, allowed private entities to acquire imagery having a resolution of less than 10-meter capability.

The liberalization process continued. "During the Bush Administration, the possibility of allowing one-meter commercial systems was raised but 'ran into a brick wall' thrown by the Central Intelligence

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108. *Id.* § 607.

109. CHRISTOL, SPACE LAW, *supra* note 56, at 360 (citing 3 Space Policy 355, No. 4 (Nov. 1987)).

110. The problems revolved mainly around funding and the proper procedural transition. *See* CHRISTOL, SPACE LAW, *supra* note 56, at 360-64; Hayward, *supra* note 8, at 167.

111. *See* 15 C.F.R. §§ 960.4-.12 (1995).

112. *See id.* § 960.1(a).

113. *Id.* § 960.1(b)-(c).

114. *Id.* § 960.4.

115. *Id.* § 960.10.

116. *White House Fact Sheets Outlining Administration's Commercial Space Initiative and President's Directive on National Space Policy*, 49 FED. CONT. REP. 282, 286-87 (1988).

117. Seay, *supra* note 10, at 247-48.

Agency."[118] However, the Bush Administration managed to license one 3-meter resolution system for WorldView Imaging Corporation just before President Bush left office in January 1993.[119]

B. *The Land Remote Sensing Policy Act of 1992*

Although the Land Remote Sensing Policy Act of 1992 (1992 Act) stresses the importance of national security interests and concerns, it goes further in the process of commercialization than its predecessor, the 1984 Act. The 1992 Act focuses on market considerations and the promotion of private investment.[120] It reveals a shift in the main focus of remote sensing policy from national security concerns to the support of investments in remote sensing technology.[121] The purposes of the 1992 Act include: "removing unnecessary restrictions on the dissemination of privately gathered data; streamlining of the licensing process for private remote sensing systems; and encouraging growth of the market for remote sensing data."[122] The 1992 Act sets out in great detail the licensing process[123] and the conditions for operation of privately-owned remote sensing systems.[124] However, its strongest contribution is that it shifts decisionmaking power to the Secretary of Commerce and away from the Departments of Defense and State.[125]

Under the 1992 Act, national security safeguards and other regulatory restrictions on private remote sensing satellite systems are loosened to a certain extent by excluding resolution restrictions and shifting responsibilities away from the military establishment.[126] The private sector reacted well to the 1992 Act. After its passage, the

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118. Joseph C. Anselmo, *High Resolution Systems Promise Revolution in TV News*, AEROSPACE DAILY, Nov. 28, 1994, at 286.

119. *See* Don Clark, *Spy Satellites Go Commercial*, SAN FRANCISCO CHRON., Aug. 9, 1993, at D1.

120. *See* 15 U.S.C.A. § 5601 (West Supp. 1995); *see also Statement on Signing the Land Remote Sensing Policy Act of 1992*, 28 WEEKLY COMP. PRES. DOC. 2182 (Oct. 28, 1992) [hereinafter *Signing Statement 1992*].

121. *See Signing Statement 1992*, *supra* note 120, at 2182.

122. *Id.*

123. 15 U.S.C.A. § 5621 (West Supp. 1995).

124. *Id.* §§ 5611, 5621-5622.

125. *Id.* §§ 5602, 5611, 5657; *see also* The Aeronautics and Space Policy Act of 1994, S. Res. 14222, 103d Cong., 2d Sess., Tit. III, § 301(1)-(3) (1994) (pending signature of the President) (aimed at revising and amending the Land Remote Sensing Policy Act of 1992 with respect to management and licensing of remote-sensing systems).

126. *See* George Brown, *Commercial Remote Sensing Policy*, CONG. PRESS RELEASE (Comm. on Science, Space & Technology, U.S. House of Representatives), Mar. 10, 1994, at 1.

NOAA received five license applications to operate private remote sensing space systems.[127]

C. *The Clinton Administration's 1994 Policy on Remote Sensing Space Capabilities*

In March 1994, the Clinton Administration announced its policy to allow expanded sales of images from space and exportation of remote sensing systems (1994 policy).[128] This policy gives United States companies more freedom to sell satellite imagery on the international market.[129] The significance of the 1994 policy lies in its acknowledgment of the relationship between national security goals and long term economic stability and security.[130]

"The fundamental goal of [the] policy is to support and to enhance US industrial competitiveness in the field of remote sensing . . . while at the same time protecting US national security and foreign policy interests."[131] Under the 1994 policy, companies must obtain a license from the Secretary of Commerce to operate remote sensing systems and sell those images to domestic and foreign entities.[132] The NOAA, under the supervision and authorization of the Secretary of Commerce, issues licenses and provides support so the Secretary can respond to applications within 120 days.[133] Similarly, the export of remote sensing systems is considered on a case-by-case basis, and the export of sensitive technologies is reviewed on a restricted basis.[134] These operating licenses were not intended to replace the export license required by the State Department and restricted by the United States Munitions List, or the radio frequency license issued by the FCC.[135]

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127. *Commercial Remote Sensing in the Post-Cold War Era: Joint Hearing Before the Comm. on Science, Space and Technology and the Permanent Select Comm. on Intelligence*, 103d Cong., 2d Sess., 43-44 (1994) (testimony of Dr. James Baker, Under-Secretary NOAA); *see also* Foley, *supra* note 34, at 22.

128. *See Policy Release*, *supra* note 1, at 1.

129. *See id.*

130. *Id.*

131. *See Fact Sheet*, *supra* note 2, at 1.

132. *Id.* at 1-2.

133. 15 U.S.C.A. § 5621(a) & (c) (West Supp. 1995).

134. *Fact Sheet*, *supra* note 2, at 3.

135. *See id.* at 1; *see also* 15 U.S.C.A. §§ 5621(b), 5656(a) (West Supp. 1995); The United States Munitions List, 22 C.F.R. §§ 120.2, 121.1, category XV(b), 122.1, 122.2 (1995) (indicating that the State Department retains the power to issue licenses for the export of remote sensing satellites); Export Administration Regulations Commodity Control List, 15 C.F.R. § 799.1 (9A04A) (1995) (listing items regulated by the Department of Commerce); *Commercial Remote Sensing in the Post-Cold War Era: Joint Hearing Before the Comm. on Science, Space and Technology and the Permanent Select Comm. on Intelligence*, 103d Cong., 2d Sess. 5-7 (1994) (testimony of Dr. Scott Pace, Critical Technologies Institute, RAND Corp.) [hereinafter

Instead, the 1994 policy indicates that the Department of Commerce will operate with the "*presumption* that remote sensing space systems whose performance capabilities and imagery quality characteristics are available or are planned for availability in the world marketplace (e.g., SPOT, LANDSAT, etc.) will be *favorably considered.*"[136]

1. *National Security Restrictions*

The 1994 policy provides for specific conditions to be included in the license in order to protect national security interests and international obligations.[137] However, the policy itself reflects the intelligence community's lift of the blanket opposition to the release of space-based data.[138] Although such opposition was lifted and the policy supposedly "unleashes"[139] for United States companies the potential for using "21st century information technology,"[140] major national security safeguards remain.

The 1994 policy "leaves room for the Government to shut down a satellite system during . . . 'periods when *national security* or international obligations and/or foreign policies may be compromised.'"[141] This restriction is known as the "Shutter Clause." It requires the licensee to use "a data downlink format that allows the US Government access and use of the data during periods when *national security*, international obligations and/or foreign policy may be compromised."[142] The 1994 policy also requires the following:

> During periods when *national security* or international obligations and/or foreign policies may be compromised, as defined by the Secretary of Defense or the Secretary of State, respectively, the Secretary of Commerce may, after consultation with the appropriate agency(ies), require the licensee to limit data collection and/or distribution by the system to the extent necessitated by the given situation. Decisions to impose such limits only will be made by the

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Testimony of Dr. Pace].

136. *Fact Sheet*, *supra* note 2, at 1 (emphasis added).

137. *Policy Release*, *supra* note 1, at 2.

138. *See Commercial Remote Sensing in the Post-Cold War Era: Joint Hearing Before the Comm. on Science, Space and Technology and the Permanent Select Comm. on Intelligence*, 103d Cong., 2d Sess. 22 (1994) (statements of James Woolsey, Director, CIA) [hereinafter Statements of Woolsey]; *see also Few Details Revealed on Satellite Imagery Export Policy; Policy, Export Licenses Expected Within Months*, DEF. DAILY, Nov. 18, 1993, at 251.

139. *Policy Release*, *supra* note 1, at 1.

140. *Id.*

141. *Id.* at 5; *see also* Edmund L. Andrews, *U.S. to Allow Sale of the Technology for Spy Satellites*, N.Y. TIMES, Mar. 11, 1994, at A1 (emphasis added).

142. *Fact Sheet*, *supra* note 2, at 2 (emphasis added).

> Secretary of Commerce in consultation with the Secretary of Defense or the Secretary of State, as appropriate. Disagreements between Cabinet Secretaries may be appealed to the President. . . .
> Pursuant to the Act, the US Government requires US companies that have been issued operating licenses under the Act to notify the US Government of its intent to enter into significant or substantial agreements with new foreign customers. Interested agencies shall be given advance notice of such agreements to allow them the opportunity to review the proposed agreement in light of the *national security*, international obligations and foreign policy concerns of the US Government.[143]

These national security safeguards were implemented in order to satisfy the intelligence and military communities who feared an all-out hands-off commercialization policy.[144] Other conditions include the following: (1) the licensee must maintain a record of the satellite operations for the previous twelve months and allow the government access to that record; (2) the licensee may not change the operational characteristics of the satellite system without notifying and receiving approval from the Department of Commerce; (3) the government must approve the encryption devices in remote sensing systems for the purpose of denying unauthorized access to data; and (4) the license is valid for a limited time and is not transferable or subject to foreign ownership, above a certain threshold, without the permission of the Department of Commerce.[145]

The term "national security" is not defined or clarified anywhere in the acts, regulations, or policy. While the emphasis on "national security" remains, the scope and context of the term are ambiguous and uncertain. This ambiguity might very well serve the goals of the intelligence community, a community that prefers a flexible and easily adaptable term. However, it provides great uncertainty and risk for private ventures, which are already taking great risks by venturing into space.

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143. *Id.* (emphasis added).

144. *See* Statements of Woolsey, *supra* note 138, at 22; John Mintz, *Whose Are the Eyes That Spy?; the CIA Could Do Business or Battle Over Satellite Photos*, WASH. POST, Feb. 8, 1994, at D1; Jones & Walter, *National Security, Technology Transfer Control and U.S. Space Policy*, *in* INTERNATIONAL SPACE POLICY 67-68 (Papp & McIntyre eds., 1986).

145. *Fact Sheet*, *supra* note 2, at 1-2. The threshold is not specified in the policy or the regulations of 1987.

V. NATIONAL SECURITY SAFEGUARDS: PROBLEMS AND CONCERNS

The primary object behind the national security safeguards is to prevent the disclosure of images of the United States or other vital sites from which intelligence information can be extracted by foreign intelligence agencies.[146] However, private operators of remote sensing systems look upon the 1994 policy and the regulations to provide them with an economic environment that will enable them to compete effectively on the international market and help them maintain their technological and economic leadership in the area of high-resolution imagery.[147] Both of these concerns and objectives are legitimate and should be given important consideration, and the 1994 policy attempts to strike a balance between these two goals. However, the national security safeguards included in the regulations and the 1994 policy fail to meet both of these objectives in two ways. First, they inject uncertainty and legal risk in private ventures. Second, they fail to provide the security sought by the intelligence community.

Under the existing domestic legal regime, the degree of certainty and predictability essential for commercial development is missing. Concerns exist over the lack of a clear legal standard regarding when and how these national security safeguards will be invoked. Additionally, uncertainty is created by the lack of a clear definition of the term "national security" and the complex maze of inter-agency consultations during the process of licensing.[148] Before proceeding further in examining these sources of uncertainties, it is essential to focus on and understand the position of the intelligence community vis-à-vis the commercialization of remote sensing imagery.

A. *National Security Restrictions and the Intelligence Community*

For a long time there has been a division between military reconnaissance and commercial remote sensing systems in terms of technological developments and capabilities. As civilian systems advance technologically and their resolution power increases, the division is "melting away,"[149] leaving a serious conflict between the

146. *See* GLENN H. REYNOLDS & ROBERT P. MERGES, OUTER SPACE: PROBLEMS OF LAW AND POLICY 184 (1989).

147. *See* Testimony of Frey, *supra* note 3, at 10-12; Statement of Araki, *supra* note 40, at 10-15.

148. *See* Testimony of Dr. Pace, *supra* note 135, at 90, 94.

149. DeSaussure, *supra* note 29, at 373.

intelligence community and commercial ventures. The intelligence community insists that the sale of high-resolution remote sensing imagery poses a threat because it will increase the vulnerability of United States forces by increasing costs, reducing the effectiveness of military operations, and causing higher casualties.[150] Space-based imagery might provide valuable intelligence information to countries lacking their own reconnaissance satellites; it will help disseminate information regarding United States military operations, thereby depriving United States troops of the critical tactical element of surprise; and finally, it will deprive the military of control during a time of crisis.[151] By monitoring and exposing military build up and disposition of forces, remote sensing hinders the execution of conventional first strikes and might very well trigger a premature armed conflict if the data is misread and misapplied.[152]

For decades, the intelligence community used two principal tools to protect its intelligence secrets and methods: (1) spatial resolution limitations, and (2) access to data.[153] The intelligence community, through its active role in the licensing process, forced limits on technology and design criteria embodied in civilian remote sensing systems.[154] Until recently, the intelligence community showed great resistance to resolutions of less than 10-meter capability because of "national security concerns."[155] Such a resolution limitation was considerable in light of the knowledge that the Department of Defense and the Central Intelligence Agency operate systems with 0.1-meter resolution capability.[156] With such a resolution limitation, the intelligence community can restrict the clarity of images and make any interpretation problematic. Limitations on access to data were the primary tools used by the intelligence community which, through the participation of the Department of Defense in the licensing process, keeps a close eye on who is getting access to data and for what

150. Foley, *supra* note 34, at 22.

151. OFFICE OF TECHNOLOGY ASSESSMENT, U.S. CONGRESS, COMMERCIAL NEWSGATHERING FROM SPACE - A TECHNICAL MEMORANDUM 30-32 (1987) [hereinafter COMMERCIAL NEWSGATHERING].

152. Gupta, *supra* note 37, at 113.

153. Frederick B. Henderson III., *Private Sector Satellite Remote Sensing: Barriers to Commercialization*, *in* 2 AMERICAN ENTERPRISE, THE LAW, AND THE COMMERCIAL USE OF SPACE 79, 102-05 (Phillip D. Mink, Esq., ed., 1986).

154. *See* TECHNICAL MEMORANDUM, *supra* note 45, at 95. These limitations were implemented in the U.S. Policies and Regulations. *See* CHRISTOL, SPACE LAW, *supra* note 56, at 363; Seay, *supra* note 10, at 245.

155. Henderson, *supra* note 153, at 103.

156. *See* Foley, *supra* note 34, at 22.

purpose.[157] Some of the conditions in the Clinton Administration's 1994 policy embody such limitations, although the extent of their applicability remains to be tested.[158]

B. *Lack of a Legal Standard and Uncertainty in the Procedures*

The arguments made by the intelligence community are valid and should not be discarded. However, they fail to recognize the economic realities of the post-Cold War world. The intelligence community's concerns arose when the United States was one of the very few players in the arena of remote sensing imagery. Now that other players have entered the picture, however, the values and safeguards should change to give United States companies the opportunity to compete on equal footing with foreign companies and governments. There is no question that the tension between the intelligence community and the business community has eased and national security safeguards have substantially receded.[159] However, questions of when and how these safeguards will be invoked remain.[160] Because of the political nature of the term "national security," its definition and scope vary with the changing policies of the administration in power.

In other legal contexts, such as the Foreign Intelligence Surveillance Act of 1978[161] and the Freedom of Information Act,[162] the question of the scope of the term "national security" has caused great confusion.[163] The confusion is attributed to the complexity of the standard, the failure of Congress to formulate clear legislation, and the

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157. Henderson, *supra* note 153, at 104; *see also* TECHNICAL MEMORANDUM, *supra* note 45, at 95.

158. It is important to note that the use of high-resolution imagery is seen by some as a stabilizing factor on the international level by "calming overblown fears" and reducing the fears of surprise attacks. *See* Florini, *supra* note 12, at 112.

159. *See supra* section IV.

160. Nowhere in the Land Remote Sensing Commercialization Act of 1984, The Land Remote Sensing Policy Act of 1992, or the NOAA regulations and the 1994 policy is the term "national security" defined. For example, when Anita Jones, the Director of Defense Research and Engineering, was asked about what standard the Department of Defense will use to determine when national security is threatened, she replied: "Let's see. That — . . . Let's see, I don't there is — it is such a complex problem; there's not something so simple that is one standard that is a recipe that tells you how to deal with each situation." *Press Briefing with Deputy Secretary of Defense John Deutch and Director of Defense Research and Engineering Anita Jones*, FED. NEWS SERVICE, Oct. 5, 1994, *available in* LEXIS, News Library, Curnws File.

161. 50 U.S.C.A. §§ 1801-1829 (West 1991 & Supp. 1995).

162. 5 U.S.C.A. § 552 (West 1996).

163. *See* CIA v. Sims, 471 U.S. 159 (1985) (reviewing the term "national security" in the context of the Freedom of Information Act); United States v. Morison, 604 F. Supp. 655, 658-59 (D. Md. 1985) (using the terms "national security" and "national defense" interchangeably in the context of the Espionage Act).

manner in which the executive branch has enforced and interpreted it.[164]

The use of the term "national security" in the 1984 and 1992 Acts and in the 1994 policy has not gone unnoticed. Use of the term without definition has been characterized as unconstitutionally vague because it fails to give companies a clear standard on how and when the safeguards will be applied to their systems.[165]

However, the challenge will rarely survive the judicial deference given to the executive branch in matters relating to national security and foreign affairs, as courts, when faced with the issue of the vagueness of the term "national security," have consistently held in favor of the executive branch or the agency enforcing the statute containing an undefined "national security" term.[166]

The intradepartmental consultation provided for in the NOAA regulations and the 1994 policy may add to this uncertainty because each department will be responsible for promulgating its own standards on when and how national security safeguards are to be applied.[167] Such additional procedures might delay the process and create confusion as to whether a license should be granted or denied. In the face of such uncertainty and confusion, the NOAA promised to promulgate rules clarifying the process and relaxing the standards.[168]

This uncertainty was manifested when Saudi Arabia, in conjunction with Litton Itek and GDE Systems, applied for a license to operate a remote sensing system called Eyeglass.[169] The application not only sparked a heated debate between the Department of Commerce and the Departments of Defense and State, but also triggered congressional debate about the sale and its military implication for the security of Israel, the United States' main ally in the Middle East.[170]

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164. Harold Edgar & Benno C. Schmidt Jr., *Curtiss-Wright Comes Home: Executive Power and National Security Secrecy*, 21 HARV. C.R.-C.L. L. REV. 350, 406 (1986).

165. Licensing of Private Remote-Sensing Space Systems, 52 Fed. Reg. 25,966 (1987); *New Remote Sensing Regulations May Better Explain Shutter Policy*, AEROSPACE DAILY, May 8, 1995, at 204.

166. *See* Regan v. Wald, 468 U.S. 222 (1984); Haig v. Agee, 453 U.S. 280 (1981); Dep't of Navy v. Egan, 484 U.S. 518 (1988); Snepp v. United States, 444 U.S. 507 (1980); New York Times Co. v. United States, 403 U.S. 713 (1971); Horizons Int'l, Inc. v. Baldrige, 811 F.2d 154 (3d Cir. 1986); United States v. Dedeyan, 584 F.2d 36 (4th Cir. 1978); United States v. Morison, 604 F. Supp. 655 (D. Md. 1985).

167. *See Fact Sheet*, *supra* note 2, at 2.

168. *Remote Sensing Industry Pushes for More Regulatory Relaxation*, SATELLITE WEEK, May 8, 1995, *available in* LEXIS, News Library, Curnws File.

169. Steve Rodan, *Space Wars*, JERUSALEM POST, Mar. 10, 1995, at 8.

170. *See* Philip Finnegan, *Imagery Firms Fear Policy Shift; Congressional Flak Over Sale to Saudis Threatens Industry*, DEFENSE NEWS, Oct. 17, 1994, at 3.

This example illustrates the uncertainty that United States companies are faced with when venturing into the sale or import of high-resolution imagery and remote sensing systems.

Companies are skeptical about how and when the political winds might alter and reshape an unclear and ambiguous standard such as the national security concept. Furthermore, the question in the minds of United States and foreign corporate executives is whether they are willing to invest a substantial amount of money—approximately $200 million in the case of Eyeglass—and take the risk of having their license denied or revoked for political reasons. The question is especially relevant when considering the number of foreign competitors who are more than willing to enter into agreements with clients (such as the Saudis) to build and operate a remote sensing system.

C. *Attempts to Define National Security*

Other areas of law might provide helpful insight on the scope and breadth of the term "national security" in remote sensing regulation. In the Export Administration Act,[171] national security controls restrict trade in any goods and technology that would enhance the military power of a foreign nation to the detriment of United States security.[172] From a military perspective, "national security" is defined as "a military or defense advantage over any foreign nation or group of nations, or . . . a favorable foreign relations position, or . . . a defense posture capable of successfully resisting hostile or destructive action from within or without, overt or covert."[173]

National security had to take a different twist in light of the dramatic political, economic, and social changes that took place in the world with the collapse of the Soviet Union and the Eastern block. The changes forced United States administrations to reformulate their concept of national security because military and economic security became so intertwined so as to be inseparable.[174] The power of nations depends not only on their military strength and readiness, but also on the economic power of their private industries and the stability

171. 50 U.S.C.A. app. §§ 2401-2420 (West 1991 & Supp. 1995). The purpose of the Act is to minimize uncertainties in export control policy and to regulate exports while promoting U.S. economic and political goals. *Id.* § 2402.

172. *Id.* § 2402(2)(A).

173. HAROLD H. KOH, THE NATIONAL SECURITY CONSTITUTION: SHARING POWER AFTER THE IRAN-CONTRA AFFAIR 262 n.23 (1990) (quoting Barnet, *Rethinking National Strategy*, NEW YORKER, Mar. 21, 1988, at 107).

174. Ronald H. Brown, *New Frontier in Space for U.S. Entrepreneurs*, HOUSTON CHRON., Nov. 17, 1994, at B19.

of their economies, both of which enable them to compete efficiently and effectively in the international market.

For private industry, security can be defined as freedom to conduct business in an environment free from "danger, fear, anxiety and deprivation relating to its right to conduct business, its equipment, its employees, its technology, and its profits."[175] The ability to operate in a stable and consistent legal, political, and economic environment is an essential part of surviving and competing on international and domestic levels.[176] The success of private industry will contribute to national security (broadly defined) by maintaining the industrial base of the United States economy, encouraging development in high-technology, and advancing the economy.

Economically speaking, the problem with the vagueness of the term "national security" is whether the NOAA regulations and the 1994 policy can create an environment conducive to business ventures and operation. The vagueness of the term "national security" injects uncertainty in the private sector and fails to give companies with remote sensing ventures the stability necessary to conduct such expensive and risky operations.[177] Prospective applicants for remote sensing systems may want greater certainty as to when a license may be granted and under what conditions the "Shutter Clause" might apply to their systems.[178] However, such certainty would restrict the power of the executive branch—a group that is interested in expanding the matters deemed "national security concerns."[179] Thus, the dilemma that surfaces in the context of national security is whether we should entrust to the President and the executive branch the task of determining fluctuating national security interests in the area of remote sensing imagery, thus tying it to current political sympathies and antipathies, or whether we should define a clear standard and insist on a clear statutory statement as the predicate for executive power.

There is no easy answer to this dilemma. However, in the face of the development of advanced foreign systems, the application of a vague and unpredictable standard will make it very difficult for companies to compete efficiently in the world market.[180] Working

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175. *See* Hoover, *supra* note 64, at 115.

176. *See id.* at 121-22.

177. *See* Testimony of Frey, *supra* note 3, at 8-9.

178. Anselmo, *supra* note 118.

179. *Cf.* Edgar & Schmidt, *supra* note 164, at 354. Edgar and Schmidt argue that the Executive's power is at its peak when matters are characterized as "secret" and that vagueness will allow the Executive to determine the parameters of what is permissible.

180. *See* TECHNICAL MEMORANDUM, *supra* note 45, at 13.

with such a vague standard will lead United States companies to raise their prices in order to compensate for the lack of certainty, which will inhibit the commercial development of their imagery and put them at a disadvantage in the global market.

D. Lessons to Be Learned from the Export Control Regime

Studies conducted on the costs of export controls and other "disincentives" reveal that United States companies lose up to $40 billion per year in lost sales abroad.[181] For example, when the United States imposed sanctions on the People's Republic of China and Pakistan for the sale of Chinese missile components to Pakistan by prohibiting the sales of satellites, satellite technology, and other related equipment, the Chinese contracted with the Germans to purchase twenty satellites.[182] This Sino-German deal represented $2 billion in lost sales for United States companies and jeopardized their chances of securing future deals.[183] To solve the problems and ease the burdens, the Clinton Administration unveiled a new export policy aimed at simplifying the export licensing process and allowing United States companies to remain competitive on the international market.[184]

Furthermore, in order to allow United States companies to compete more effectively, the foreign availability regulations[185] were enacted. Under the new export policy, the Secretary of Commerce is empowered to grant licenses otherwise denied for national security reasons when

> the Secretary determines that an item is comparable in quality to an item subject to U.S. national security export controls, and is available-in-fact to a country, from a non-U.S. source, in sufficient quantities to render the U.S. export control of that item or the denial of an export license ineffective.[186]

The two important lessons to be learned from this brief discussion are: (1) restrictions on companies can have dramatic economic effects on their competitiveness thereby eroding market share; and (2)

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181. *See, e.g., U.S. Export Controls, Other "Disincentives" Cost Firms $40 Billion a Year, Study Says*, INT'L TRADE REP., Sept. 29, 1993, at 1608, 1608 [hereinafter *U.S. Export Controls*].

182. Bradley K. Steinbrecher, Comment, *The Impact of the Clinton Administration's Export Promotion Plan on U.S. Exports of Computers and High-Technology Equipment*, 15 U. PA. J. INT'L BUS. L. 675, 688-89 (1995).

183. Simon Beck, *Hughes Chief Blasts U.S. on China Trade Sanctions*, S. CHINA MORNING POST, Jan. 21, 1993, at 14.

184. *See U.S. Export Controls*, *supra* note 181, at 1608.

185. 15 C.F.R. § 791 (1995).

186. *Id.* § 791.2(a).

restrictions can be unnecessary and ineffective if the product restricted is available from a non-United States source. These lessons are very important for the sale of remote sensing imagery, not only in light of the fierce competition and availability of similar imagery from other non-United States sources, but also in light of the economic costs that these national security restrictions might impose on United States companies. This is especially relevant when these restrictions are vague, untested, and their outcome uncertain. As one executive commented, the "question for the future is not whether there will be one-meter satellite imagery available commercially—it will happen—but rather will it be provided by U.S. companies or other foreign sources."[187]

The market reality is that imagery can be obtained from foreign sources while United States companies are burdened with regulations and policies that do not apply to these foreign entities.[188] The 1994 policy is set up so as to take foreign availability into consideration, but there are no specific guidelines on how and when it will be considered.[189]

VI. ECONOMIC IMPLICATIONS AND NON-MARKET FACTORS

The changes in the supply side of remote sensing imagery was prompted by a high demand for the product on national and international levels. An efficient supplier, faced with a fertile market, will strive to produce a better image with sharper resolution at a low price so as to generate the most profit.[190] Thus, the price and the quality of the imagery will be determined by market factors.[191] However, when non-market factors, such as government regulations and unnecessary restrictions intervene, the market is distorted and efficiency is decreased.[192]

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187. Statement of Araki, *supra* note 40, at 11 (quoting John McMahon, President, Lockheed Missiles).

188. Licensing of Private Remote-Sensing Space Systems, 52 Fed. Reg. 25,967 (1987); *see also* Kramer, *supra* note 10, at 364. An example of the government's difficulty in keeping imagery away from the market occurred in Canada. The Canadian government had always gone to great lengths to keep its top-secret base, known as Alert, away from the public eye. All this effort was shattered when the Toronto Star published a satellite photo of the space station. The newspaper obtained the photo from Sojuzkarta, the Soviet commercial remote sensing agency. Barry Brown, *Canadians Get Look at Secret Nato Base from Unlikely Source*, WASH. TIMES, Aug. 28, 1989, at A7.

189. *See Policy Release*, *supra* note 1, at 1.

190. George M. Cohen, *Posnerian Jurisprudence and Economic Analysis of Law: The View from the Bench*, 133 U. PA. LA. REV. 1117, 1119 (1985).

191. *Id.* at 1121.

192. *See, e.g.*, *U.S. Export Controls*, *supra* note 181, at 1608.

Associated with every private remote sensing venture are costs and risks that private entities have to deal with and absorb. Remote sensing operators, like many other high-technology developers, have a high entry cost into the market that requires high financial investment.[193] Additionally, such investments require years to amortize and need a stable market for "technological continuity and orderly investment recovery."[194] The cost associated with obtaining the imagery depends on the resolution used, the technical characteristics of the data, and other performance parameters such as altitude, cruising speed, frequency of flights, and cost of operation.[195] These costs will determine the cost per unit, absent any other factors, such as legal uncertainty, for which the operator has provided in the form of higher prices. Thus, the decision to invest in remote sensing imagery and technology will depend not only on operation and technical costs, but also on the degree of government involvement because private operators should be able to guarantee service to future users for an extended period of time in a consistent manner.[196]

The remote sensing imagery market is projected to grow tremendously by the turn of the century.[197] The demand for remote sensing imagery is high, and United States companies are competing among themselves and with foreign competitors to produce better quality, lower-priced imagery to satisfy the market. Although the 1994 policy intends to eliminate non-market factors, it forces United States companies to react to the competition rather than surpass it.

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193. Stephen Doyle, *Legal Aspects of Space Commercialization*, *in* SPACE LAW: DEVELOPMENT AND SCOPE 127, 133 (Nandasiri Jasentuliyana ed., 1992); Robert T. Deacon et al., *Optimizing the Time Stream Benefits from State and Local Government Use of LANDSAT Data: An Application of Demand Revealing Process*, *in* PROCEEDINGS OF THE SECOND CONFERENCE ON THE ECONOMICS OF REMOTE SENSING 133, 136 K.B. Craib & T.H. Watkins eds., (1978).

194. Doyle, *supra* note 193, at 133.

195. R.T. TSUCHIGANE & K.I. CHEN, *Economics of Remote Sensing: An Alternative Approach*, *in* PROCEEDINGS OF THE SECOND CONFERENCE ON THE ECONOMICS OF REMOTE SENSING 98, 99 K.B. Craib & T.H. Watkins eds., (1978).

196. HARR & KOHLI, *supra* note 25, at 23.

197. *Id.* at 26.

VII. POSSIBLE SOLUTIONS AND EXISTING SAFEGUARDS

A. Defining National Security

The promise of the Clinton Administration's 1994 policy on remote sensing space capabilities and of the Land Remote Sensing Policy Act of 1992 might be hollow in the absence of a clear standard on the subject of national security. If the 1992 Act is not amended to reflect a clear standard, the current administration must adopt its own standard that takes into account economic realities. If the intent of the United States is to allow its companies to compete efficiently in the global market, a narrow definition of national security should be adopted. While national security concerns should be read narrowly in the 1992 Act and in the 1994 policy, decisionmakers, whether the Secretary of Commerce or Defense, should consider economic stability and certainty an integral part of the nation's national security goals.[198] Such a goal can be achieved by integrating a stronger presumption in favor of the applicant regardless of whether or not the technology and resolution capability are available in the market.

B. Alternative Remedies for Improper Conduct

The government has means of restricting the improper use of remote sensing imagery other than the restrictions imposed through the 1992 Act and the 1994 policy. Many federal laws impose criminal sanctions against improper use of remote sensing imagery. The federal espionage statutes,[199] for example, prohibit gathering and disseminating defense information,[200] photographing defense installations,[201] and gathering and delivering defense information to foreign governments.[202] These statutes and other export control regulations, such as the Munitions List restrictions,[203] provide a sufficient deterrent to companies and will protect United States national security interests to the extent possible. The statutes are applicable to remote sensing and can be effective.[204] Further, national security safeguards exist in the export statutes and regulations—they provide the same national security protection that the 1994 policy on remote sensing intends to

198. Brown, *supra* note 174, at B19; *see also* Hoover, *supra* note 64, at 121-22.
199. 18 U.S.C.A. §§ 792-799 (West 1976 & Supp. 1995).
200. *Id.* § 793.
201. *Id.* § 795.
202. *Id.* § 794.
203. 22 C.F.R. § 121.1 (1995).
204. See COMMERCIAL NEWSGATHERING, *supra* note 151, at 47-48.

provide.[205] In addition to these protections, during times of crisis, the Trading with the Enemy Act[206] provides for many of the safeguards included in the 1994 policy so as to make many of the restrictions redundant and unnecessary.[207]

C. *International Forum: A Multilateral Solution*

There are two ways the United States can restrict and monitor the sale of remote sensing imagery. First, the United States can exercise unilateral control over United States companies by implementing restrictions binding on United States companies only. Second, the United States can adopt a multilateral and international approach in which nations agree on a system similar to the non-proliferation of nuclear weapons systems—a system that will be monitored by an institutionalized agency set up to monitor compliance with international obligations.

There is no question that the United States has an international obligation to supervise and authorize its nationals in space. However, the effectiveness of unilateral national security safeguards is questionable at best. The use of such safeguards would force United States companies to compete on a different level with foreign companies, thus putting them at a disadvantage. If these restrictions are needed and the sale of remote sensing imagery should be regulated, a multilateral treaty might provide a better solution by placing all players on equal footing. With few players currently in the game, it may be possible to achieve a consensus and establish common interests and grounds to prevent national security threats to all parties to that treaty. Nations will have incentives to participate in such a multinational treaty because a treaty will put them on an equal level with other nations and might provide the forum in which security concerns and data access needs can be balanced and satisfied.

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205. 22 C.F.R. § 121.1 category XV (1995) (restricting the export of remote sensing satellite systems).

206. 50 U.S.C.A. app. §§ 1-6, 7-39, 41-44 (West 1990 & Supp. 1995).

207. *Id.* §§ 2-6.

VIII. CONCLUSION

There is no doubt that the 1992 Act and the 1994 policy fulfill the United States' international obligations of authorization, supervision, and open dissemination.[208] However, the 1994 policy poses a major challenge with regard to national security issues. With the intensification of foreign competition, the expansion of the remote sensing imagery market, and the open skies policy adopted by the United States and a substantial number of nations, very few secrets remain. It is probably futile for the United States government to thwart the sale of imagery by United States companies, especially when similar imagery can be obtained from foreign sources over which the government has no control.[209] The security of the United States lies not only in its military stability, but also in its economic and commercial success and well-being.[210]

208. *See supra* section III.A.

209. *See* Kramer, *supra* note 10, at 364 (arguing the futility of preventing publication of remote sensing imagery in news media).

210. The NOAA is considering revisions to its regulations for the licensing of private remote sensing space systems and has solicited public comments. Specifically, the NOAA solicited comments regarding the standards applicable to national security restrictions. Licensing of Private Remote-Sensing Space Systems, 60 Fed. Reg. 62,054 (1995) (to be codified at 15 C.F.R. § 960).