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NOTES

CHIPS OFF THE TRADE BLOC: INTERNATIONAL HARMONIZATION OF THE LAWS ON SEMICONDUCTOR CHIPS

Semiconductor chips: because of their strategic importance, they have been called "the 'crude oil' of industry today."¹ Semiconductors are used not only in computers and military devices but also in consumer products such as video games and microwave ovens. Their small size and vast memory capacity render them the essential element in the latest electronic equipment.

Traditional national laws and international conventions regarding intellectual property fell short of providing the protection this new industry demanded. The United States addressed this problem by enacting a *sui generis*² form of protection, which included special provisions to encourage other nations to conform with the U.S. laws.³ The result has been *de facto* international harmonization of laws regarding these devices. Multilateral attempts to unify semiconductor chip protection laws, however, have not been as successful.

Part I of this Note will give an overview of some special legal considerations which semiconductor chip ("chip") protection entails. *Part II* will explain the unilateral actions and bilateral agreements which have initiated the harmonization process. *Part III* takes up the failures of multilateral conventions to achieve unification of laws or even consensus in this area. *Part IV* assesses the current state of negotiations in the wake of the failed conventions. Finally, *Part V* presents an analysis of these problems and suggests a method by which unification of laws might be attained.

1. Professor Dr. Dr. h.c. Zentaro Kitagawa, *Legal Protection of Integrated Circuit Layout. Birth of a New Intellectual Property*, 114 ARCHIV FÜR URHEBER-, FILM-, FUNK-, UND THEATERRECHT (ARCH. URHEB. FFTR.) 59, 60 (1990).

2. Black's defines *sui generis* as, "of its own kind or class; i.e. the only one of its own kind." BLACK'S LAW DICTIONARY 1434 (6th ed. 1990). I will use the term in this sense to indicate that the type of protection enacted is unique and does not fit within traditional schemes of protection. In addition, for the purposes of this paper, I use the term to indicate that the law conforms to the special provisions analogous to those in U.S. law (i.e. the Semiconductor Chip Protection Act of 1984). See *infra* note 32 and accompanying text.

3. Semiconductor Chip Protection Act of 1984, 17 U.S.C.S. §§ 901-914 (Law. Co-op. 1978 & Supp. 1992).

I. OVERVIEW

The protection of rights associated with chips⁴ is a politically charged topic. Because chips are essential for military use and are a high-technology item, many nations want to maintain access to the technology. The most technologically advanced nations strive to have their own nationals in the forefront of the research. In addition, there are powerful private interests in this industry (e.g. the U.S. Semiconductor Industry Association ("SIA") or the Japanese Semiconductor Industry Association) which wield great influence over political leaders. Moreover, in this industry, both dumping and antitrust actions have been brought before the Secretariat of the General Agreement on Tariffs and Trade ("GATT") and also before the International Trade Commission ("ITC").⁵ Space constraints prohibit these topics from being included here, only the unification of the intellectual property protection will be covered. Note, however, that against this backdrop, the nations' negotiating strategies make more sense.

Finally, the difference between "harmonization" and "unification" should be kept in mind. Harmonization entails integration of separate, existing, legal schemes or cooperation between enforcement bodies, in order to expedite the enforcement of the separate schemes. Unification, on the other hand, involves agreement upon a single text. There exists a world of difference between these two processes, some of which will be explored herein.

A. *Inapplicability of Traditional Forms of Intellectual Property Protection*

Unfortunately, the traditional methods of protecting intellectual property; copyright, trademark, and patent, have not proved capable of protecting chips. This deficiency served as impetus to establish a form of protection which was outside of the established intellectual property conventions.

4. A semiconductor chip is a thin slice of silicon, a material whose electrical conductivity is easily changed by minute amounts of substances on its surface. DENNIS LONGLEY & MICHAEL SHAIN, *DICTIONARY OF INFORMATION TECHNOLOGY* 303 (2nd ed. 1986). The chip is etched with layers of circuit layouts (these layers are often called "mask works"). Jonathan H. Lemberg, *Semiconductor Protection: Foreign Responses to a U.S. Initiative*, 25 *COLUM. J. TRANSNAT'L L.* 345, 346 (1987). The finished product serves to store a great amount of information on a relatively small surface.

5. Antidumping Order, 51 Fed. Reg. 21,781 (1986); *Japan — Trade in Semiconductors*, GATT Doc.L/6309 (March 14, 1988) (GATT Dispute Settlement Panel Report, derestricted August 22, 1988 (INF/240)). "Dumping" refers to the practice of one nation underpricing its goods in order to gain market share in another country. Generally nations do not want foreign goods flooding their internal markets even though consumers may benefit from lower prices.

The rationale behind protecting intellectual property is that creativity will be encouraged, and new inventions will be generated, if an inventor is assured that others will not be able to copy her invention without remunerating her, or without her permission. The stability created thereby, will also encourage businesses to invest in this type of research without fear of losing their investments to copiers. It often takes an enormous investment to invent something covered by intellectual property laws, but it is relatively cheap to copy.

Unfortunately, the traditional categories of intellectual property protection can not be easily applied to the semiconductor industry. Trademark laws protect observable "words, names, symbols and devices that distinguish goods and services from other, similar goods and services."⁶ Because chips are integrated into the internal mechanisms of other products, this type of protection is meaningless for chips. Patent law which grants property rights to "new, useful, and nonobvious processes and products"⁷ might appear capable of providing adequate protection. The circuit layout itself, however, is the component which requires protection. This layout is usually invented as a result of application of established rules of mathematics. As a result, the chip designs do not usually fulfill patent law requirements of "novelty" or "inventive step,"⁸ necessary before the invention will be protected.

Finally, copyright law which protects "original expression" but not the ideas which the creator expresses,⁹ might seem capable of providing intellectual property protection for chips. This, however, remains a debated proposition. As a practical matter, copyright protection has not usually been extended to this industry because doing so would risk an over-broad application of the theory of copyright protection. It is feared that too many products (such as blenders or even tractors) would then fall under the aegis of copyright law. Moreover, the nature of the chip industry is such that the twenty year period of protection provided by most copyright laws, is too long to serve the needs of this rapidly-changing industry.¹⁰ These difficulties render established forms of intellectual property protection inadequate to protect chips. Thus the traditional international conventions (Berne Convention, Paris Convention),¹¹ which encom-

6. Marshall A. Leaffer, *Protecting United States Intellectual Property Abroad: Toward a New Multilateralism*, 76 Iowa L. Rev. 273, 279 n.30 (1991).

7. *Id.* at 279 n.31.

8. Kitagawa, *supra* note 1, at 61.

9. 17 U.S.C. § 102(b) (1976).

10. Kitagawa, *supra* note 1, at 61.

11. Berne Convention for the Protection of Literary and Artistic Work, as last revised, July 24, 1971, 828 U.N.T.S. 221 [hereinafter Berne Convention]; Paris Convention for the Protection of Industrial Property, as last revised, July 14, 1967, U.S.T. 1583 [hereinafter Paris Convention].

pass these forms of intellectual property protection on an international scale, were equally inadequate for the chip industry.

B. *Considerations Unique to Chip Protection*

There exist further complications which render traditional forms of intellectual property protection inappropriate for chip protection. Certain practices are unique to the semiconductor industry. First, chip manufacturers often engage in "reverse engineering."¹² Manufacturers in the United States consider this right crucial, since it avoids the (often strategic) risk of depending on only one supplier.¹³ Reverse engineering must be distinguished from "chip piracy" which entails direct copying. This distinction is often fuzzy.¹⁴ It would be impossible to introduce the concept of reverse engineering into traditional intellectual property protection schemes without drastically altering them. Again, adequate chip protection calls for an entirely new scheme.

Another idiosyncrasy of the semiconductor industry is that some nations do not take offense to "innocent infringement." An "innocent infringement" provision stipulates that if a producer is unaware that it is importing or distributing a chip which has been pirated, it incurs no further liability than paying reasonable royalties.¹⁵ This legal structure is beneficial in that it encourages wide distribution of the chips. In sum, the special practices inherent in the chip industry place the intellectual property protection that the chips require, outside of traditional forms of protection.

C. *International Considerations for Chip Protection*

Although intellectual property is regulated by both the Berne Convention¹⁶ and the Paris Convention,¹⁷ both of which are administered by the World Intellectual Property Organization ("WIPO"),¹⁸ the protection these conventions offer is considered inadequate by many nations because they specify very low minimum

12. Reverse engineering is the practice by which a manufacturer examines a competitor's circuits and then designs a new "improved" chip which performs the same function but with a different design. Lemberg, *supra* note 4, at 351.

13. *Id.*

14. See, e.g., *The Semiconductor Chip Protection Act of 1983: Hearings on S. 1201 Before the Sub-comm. on Patents, Copyrights and Trademarks of the Senate Comm. on the Judiciary, 98th Cong., 1st Sess. 81 (1983)*; Lemberg, *supra* note 4, at 351 n.50. "If the Russians do it its piracy. . . if an American does it, it is reverse engineering."

15. 17 U.S.C.S. § 907 (Law. Co-op. 1978 & Supp. 1992).

16. Berne Convention, *supra* note 11.

17. Paris Convention, *supra* note 11.

18. *World Intellectual Property Organization, General Information*, WIPO Publication No. 401 (E) at 14 (1988).

standards and lack enforcement capabilities.¹⁹ Furthermore, although the Uruguay Round of the GATT talks is currently negotiating agreements on intellectual property, no resolution has yet been reached.²⁰ These conventions, and their capabilities of providing adequate chip protection, will be dealt with in Part III of this Note.

Another international consideration which arises within the chip industry is a notion which is not known in American law: "compulsory licensing."²¹ In some countries, after an inventor is paid a *one-time*, statutorily set fee, there are no further constraints on distribution of the product.²² A problem often encountered under this scheme is that the fees are set too low for the inventor to recoup her investment. The result is a "de facto expropriation" of the intellectual property protection.²³ Compulsory licensing is favored by lesser developed countries ("LDCs")²⁴ who believe multinational companies use their monopoly powers to exploit the LDC citizens.²⁵ These countries also believe that they should be given easy access to technology, notwithstanding their frequent inability to provide ongoing intellectual property protection. They also assert that a one-time fee is easier to administer.²⁶

This raises a more general grievance of LDCs regarding harmonization of their laws to conform with those of the developed countries ("DCs").²⁷ Intellectual property laws presuppose substantial infrastructure in an enforcing country such as: competent legal process and enforcement abilities; and a body of enforcement personnel with sufficient technical knowledge to recognize violations. LDCs

19. See INTERNATIONAL TREATIES ON INTELLECTUAL PROPERTY 1-14 (Marshall A. Leaffer ed. 1990).

20. William Dullforce, *GATT: Cautious Optimism for Trade Talks Breakthrough*, FIN. TIMES, Oct. 25, 1991, § 1, at 6.

21. Although the term "compulsory licensing" exists in U.S. law, it refers to a provision of copyright law which prohibits an author from blocking the use of his copyrighted work, provided that certain formalities are complied with, and the statutory royalty rate is paid. 17 U.S.C. § 115. In other countries the same term is used differently. See *infra* note 22 and accompanying text.

22. Leaffer, *supra* note 6, at 285.

23. *Id.* at 285 n.5.

24. This is a nebulous categorization. I will use the acronym to refer to countries that have not had a substantial start into industrialization *i.e.* most of South America, and Africa. This category does not include the so-called "NICS" which are pre-industrial economies. See *infra* note 85 and accompanying text.

25. Frank Emmert, *Intellectual Property in the Uruguay Round: Negotiating Strategies of the Western Industrialized Countries*, 11 MICH. J. INT'L L. 1317, 1361 n.164 (Summer 1990) (noted in Vaitos, *Patents Revisited: Their Function in Developing Countries*, 1972 J. DEV. STUD. 71, 85-86 (1972)) (quoting data from an official study from the Instituto de Comercio Exterior of the Colombian Government).

26. Leaffer, *supra* note 6, at 281.

27. I will use this acronym to refer to the already industrialized countries such as EC members, the U.S. and Japan.

have argued that these do not exist in their countries.²⁸ Furthermore, the costs imposed on LDC governments' budgets to establish such an administration, which appears only to exist for the protection of foreigners' intellectual property rights, are often prohibitive especially in light of the immediate, though short-term, profits which are produced by chip piracy. In addition, the DCs' promises of long-term benefits of increased access to high technology seem vague and uncertain.²⁹ Moreover, some LDC leaders "are reluctant to appear to respond positively to pressure from the U.S."³⁰ since they do not want to appear to cower to DCs' interests. Finally, a constant impediment to any international efforts at consolidation of laws is the problem of sovereignty. Most nations, especially those whose sovereignty has been recently won, strongly resist what they view as an attempt to usurp their power. All of the above factors make LDCs reluctant to cooperate in any harmonization efforts especially if the methods employed by the DCs are heavy-handed.

Thus LDCs are quite rational in their reluctance, based on both economic and political reasoning, to enforce DCs' intellectual property rights or cooperate in harmonization of laws. The result is that many LDCs either refuse to protect intellectual property or, if they actually enact legislation, they will enforce it poorly if at all.

A final international consideration crucial to the chip industry involves the concept of "national treatment." This concept is a basic tenet of some multinational agreements such as the GATT and the Berne Convention,³¹ and it entails treating another state's product (or enterprise) on an equal footing with its domestic equivalent as soon as it attains customs clearance. Although these agreements may work well for goods, once again, the chip industry's unique structure renders these types of agreements inadequate to provide the intellectual property protection necessary to allow harmonization efforts to proceed.

DCs generally provide substantial intellectual property protection. A nation which grants a great deal of protection to its nationals will be forced to grant this high level of protection to foreigners while the foreign nation may not provide adequate protection in return. This situation leads some nations to favor reciprocity agreements for intellectual property, with the result that, although harmonization may proceed through bilateral agreements, unification efforts through multilateral agreements are thwarted.

28. Leaffer, *supra* note 6, at 280.

29. Leaffer, *supra* note 6, at 282 n.42.

30. *INTELLECTUAL PROPERTY RIGHTS: GLOBAL CONSENSUS, GLOBAL CONFLICT?* 17 n.19 (R. Michael Gadbow & Timothy J. Richards eds., 1988) [hereinafter Gadbow & Richards].

31. See Berne Convention, *supra* note 11; *GENERAL AGREEMENT ON TARIFFS AND TRADE*, pt. II, art. III [hereinafter GATT Treaty].

This is the international situation regarding the enforcement of intellectual property rights. The nature of the chip industry, the opposing objectives of the interested parties, the inadequacy of the existing forms of protection, and the corresponding international conventions, all work against unification of laws. Harmonization efforts may be more successful.

II. UNILATERAL AND BILATERAL ACTIONS

Out of fear of inadequate protection due to all of the above reasons, and in response to pressure from the SIA, impetus developed in the United States to establish entirely new laws regarding chip protection.

A. *The Semiconductor Chip Protection Act*

In 1984, the United States enacted the Semiconductor Chip Protection Act ("SCPA").³² This act provides protection upon registration of a mask work design,³³ additionally, it condones reverse engineering³⁴ and innocent infringement.³⁵ The act, however, condemns compulsory licensing.³⁶ What is interesting about this law is that it includes both a reciprocity clause³⁷ ("§ 902"), and a "transitional provision" ("§ 914"),³⁸ which together are designed to encourage other countries to enact legislation in conformance with the United States law.³⁹

Section 902 (the reciprocity clause) provides two ways for a nation to receive United States protection for its chips. First, the nation may be a party to a chip treaty.⁴⁰ This is a forward-looking clause since there are as yet no such treaties. Second, if the President of the United States finds that the nation extends chip protection to United States nationals or domiciliaries "on substantially the same basis as provided in this [statute],"⁴¹ then that nation will be granted the same level of protection the United States grants its own nationals. This provision seeks harmonization (albeit based on the arguably self-interested terms of the United States) by encouraging others

32. SCPA, *supra* note 3.

33. 17 U.S.C.S. § 902 (Law. Co-op. 1978 & Supp. 1992).

34. 17 U.S.C. § 906; *see also supra* note 12 and accompanying text.

35. 17 U.S.C. § 907.

36. 17 U.S.C. § 913; *see also supra* note 21 and accompanying text.

37. 17 U.S.C. § 902 (a)(2): "The President may revise, suspend, or revoke any such proclamation or impose any conditions or limitations on protection"

38. 17 U.S.C. § 914.

39. *Explanatory Memo of the Senate Amendment to H.R. 6163 Title III as Considered by the House of Representatives*, 130 Cong. Rec. E4432 (daily ed. Oct. 10, 1984).

40. 17 U.S.C. § 902(a)(1)(A) (Law. Co-op. 1978 & Supp. 1992).

41. 17 U.S.C. § 902(a)(2)(B) (Law. Co-op. 1978 & Supp. 1992).

to extend the same type of protection the United States provides, by offering the "carrots" of strong United States intellectual property protection, and access to the United States' market.

Note that the petitioning nation's chip law need not necessarily take the *sui generis* approach. The Commissioner of Patents in a report issued in 1986 regarded the "Essential elements of compatibility" to be that: 1) chips are a protected entity; 2) reverse engineering is allowed; 3) there is a ten year protection period; and 4) compulsory licensing is very limited.⁴² Thus in very specific and certain terms the United States unilaterally established standards of chip protection which it considered adequate and vigorously sought international conformance with the United States plan.

In addition, as an alternative to this permanent form of protection, Congress added § 914 which provides that the Secretary of Commerce may extend protection to citizens of a foreign nation if (upon petition of anyone or *sua sponte*) the secretary finds:

(1) that the foreign nation is making good faith efforts and reasonable progress toward —

(A) entering into a treaty described in section 902(a)(1)(A); or

(B) . . . or section 902(a)(2); and

(2) that the nationals, domiciliaries, and sovereign authorities of the foreign nation, and persons controlled by them, are not engaged in the misappropriation, or unauthorized distribution or commercial exploitation, of mask works; and

(3) that issuing the order would promote the purposes of this chapter and international comity with respect to the protection of mask works.⁴³

Through these two devices, the United States laid out very specific guidelines by which bilateral agreements may be negotiated.

Note however, that the overall goal of making a multilateral treaty is emphasized in the text of (1) and (3). Additionally, this goal is evidenced by the temporary nature of protection under § 914. The provision was originally scheduled to expire on November 8, 1987.⁴⁴ The necessity for periodic renewals emphasizes to the United States legislators, and the foreigners seeking protection, that a multilateral agreement has not yet been reached. This is also intended to encourage treaty-making. On the other hand, since this provision was written by one of the two dominant players in the industry,⁴⁵ it may appear dictatorial. In any case, due to the success

42. ASSISTANT SECRETARY AND COMM'R OF PAT. AND TRADEMARKS IN CONSULTATION WITH THE REG. OF COPYRIGHTS, REPORT ON THE OPERATION OF THE INTERNATIONAL TRANSITIONAL PROVISIONS OF THE SEMICONDUCTOR CHIP PROTECTION ACT OF 1984 42-43 (Nov. 7, 1986) (summarized in 33 Pat. Trademark & Copyright J.(BNA) 51 (Nov. 20, 1986)) [hereinafter Report on Transitional Provisions].

43. 17 U.S.C. § 914 (a)(1)-(3) (Law. Co-op. 1978 & Supp. 1992).

44. *Id.*

45. By 1989, the U.S. and Japan combined controlled about 80% of the chip

of the bilateral agreements reached, and the failure to make a treaty, this "transitional provision" has been extended twice. It is now scheduled to "sunset" July 1, 1994.⁴⁶

The joint United States-Japanese dominance in the chip industry is illustrated by the legislative history of the Act. In fact, the transitional provision was suggested to United States Senator Charles McC. Mathias and United States Representative Robert W. Kastenmeier by Akio Morita, Chairman of Sony Corporation, and then President of the Electronic Industries Association of Japan. Morita wrote, that the SCPA:

*will serve as a model for other countries In this respect we feel it would be very beneficial for such legislation to maintain an incentive for foreign nations to 'catch up'. . . . This could be accomplished by a reasonable interim period for full-term registration (emphasis added)*⁴⁷

Congress decided to adopt the suggestion of this powerful and often adversarial, foreign industrial interest, to set up a model law. In addition, Congress agreed that a transitional period would encourage countries "either to enact chip protection laws . . . or to conclude an international treaty."⁴⁸ Agreement between the two countries which dominate the market makes opposition to the standards they set, a proposition analogous to the story of "David and Goliath."

As expected, some of the procedural aspects of the SCPA promoted harmonization of chip laws. On November 7, 1984, the Patent and Trademark Office issued "Guidelines for the Submission of Applications for Interim Protection of Mask Works Under 17 U.S.C. § 914."⁴⁹ This report specified the procedures and information required to obtain protection in the United States, as well as provisions for public hearings and commentary. Among other things, a petitioner may be required to submit statements from a foreign government regarding legislative efforts and progress in the area of chip protection, including bills, proposals, correspondence, executive proclamations, and regulations. Additionally, the government must submit evidence that its nationals are not chip pirates.⁵⁰ This proce-

industry. See *U.S., Japan Refuse to Sign WIPO Treaty on Protection of Semiconductor Chips*, 38 Pat. Trademark & Copyright. J. (BNA) 123 (June 1, 1989) [hereinafter *U.S., Japan Refuse*].

46. 17 U.S.C. § 914 (Law. Co-op. 1978 & Supp. 1992).

47. Jay A. Erstling, *The Semiconductor Chip Protection Act and Its Impact on the International Protection of Chip Designs*, 15 RUTGERS COMPUTER & TECH. L.J. 303, 316 (1989) quoting Letters from Akio Morita to Senator Charles McC. Mathias and Representative Robert W. Kastenmeier, July 18, 1984 (copy on file with Mr. Erstling).

48. *Report on Transitional Provisions*, supra note 42, at 2.

49. 49 Fed. Reg. 44517 (1984).

50. *Id.* at 4518.

ture raises two issues regarding unification of laws. First, under these guidelines, a United States agency is demanding access to foreign governments' documents in order to evaluate and criticize foreign legislation (and even their proposals) and its application. The United States thereby obtains a substantial and often unwelcome influence in both the promulgation, and the substance, of foreign laws. Not surprisingly, this has caused some consternation overseas.⁵¹ The traditional objections to international usurpation of sovereignty certainly are apropos here. A second issue involves the time period provided for public comment before the Commissioner takes any action.⁵² This procedure might encourage the harmonization of laws by increasing the viewpoints at hand. The procedure encourages creative solutions by allowing interested private parties and third countries to influence decisions on chip protection. On the other hand, more voices may make consensus harder to reach. Nonetheless, this procedure assures that all parties are aware of the situation at hand. Once again, although heavy handed, the SCPA serves to encourage harmonization.

B. *Bilateral Responses to the SCPA*

Notwithstanding its imperialistic characteristics, the SCPA has had a profound harmonizing impact among the DCs. As one of the two most powerful nations in the chip industry, Japan was the first to file for § 914 protection.⁵³ The petition was based on the Japanese "Act on the Circuit Layout of a Semiconductor Integrated Circuit,"⁵⁴ a *sui generis* type of intellectual property protection which was made in response to the SCPA.

There are only a few differences between the Japanese act and the SCPA. For example, Japanese sanctions for violations may include criminal penalties,⁵⁵ and there are differences in the terminology and the administrative structure for registration.⁵⁶ As a practical matter, however, the Secretary of Commerce concluded that the act provided protection in the four areas required by the United States and therefore granted interim protection under § 914.⁵⁷

Eighteen other countries followed suit and were granted interim protection. To date, the nineteen countries which enjoy interim pro-

51. Gadbow & Richards, *supra* note 30, at 49.

52. *Report on Transitional Provisions*, *supra* note 42, at 9.

53. 50 Fed. Reg. 12,355 (1985).

54. Act on the Circuit Layout of a Semiconductor Integrated Circuit, Law No. 43, 1985. In English: *Industrial Property Laws and Treaties, Japan*, 25 INDUS. PROP. TEXT 1-001 (Sept. 1985).

55. *Id.* at ch. 6.

56. *Id.* at acts 28-46.

57. 50 Fed. Reg. 12,355 (1985).

tection are: Austria, Australia, Canada, Finland, Japan, Sweden, Switzerland and the twelve members of the European Community ("EC").⁵⁸

It is clear that the SCPA does specifically require a *sui generis* approach. As an illustration, Australia and the United Kingdom were initially granted interim protection even though they lacked *sui generis* laws for chips in their legislation. Their petitions claimed that protection for chips was provided under their copyright laws.⁵⁹ The Commissioner of Patents decided to grant temporary protection for pragmatic reasons:

There is no requirement that the two nation's [sic] laws be the same, or for that matter, even similar⁶⁰ International comity — mutual respect for the laws of other States — can be best promoted by acknowledging the statement of another government that their laws provide mask work protection. Harmonization of those laws can be a continuing objective of bilateral discussions

. . . .⁶¹

Thus, the mechanism provided by § 914 has proved to be a very practical measure for harmonization of chip protection laws. It is particularly helpful in forging bilateral agreements, since its temporary nature provides diplomatic flexibility, and at the same time assures that the Commissioner of Patents and the corresponding foreign authorities are progressing in their harmonization efforts. By applying § 914 "loosely," the Commissioner may give some nations the benefit of the doubt, and thereby avoid impeding trade.

However, as demonstrated by EC's chip protection negotiations with the United States, the *sui generis* approach works best within the United States designed apparatus for harmonization. Although some of the EC countries had negotiated individually with the United States, in 1985 the United States granted the EC § 914 protection⁶² based on the then-proposed Council Directive.⁶³ Section 914 established a *sui generis* scheme of protection but also allowed for the possibility of extending copyright laws to chip protection. An EC directive (as opposed to a regulation which applies as writ-

58. Austria, 54 Fed. Reg. 22,351 (1989); Australia, 50 Fed. Reg. 26,818 (1985); Canada, 50 Fed. Reg. 27,649 (1985); Finland, 52 Fed. Reg. 42,127 (1987); Japan 50 Fed. Reg. 12,355 (1985); Sweden, 50 Fed. Reg. 25,618 (1985); Switzerland, 52 Fed. Reg. 12,445 (1987); European Community, 50 Fed. Reg. 26,821 (1985).

59. Interim Protection for Mask Works of Nationals, Domiciliaries and Sovereign Authorities of Australia, the United Kingdom, Great Britain & Northern Ireland, & the Netherlands, 50 Fed. Reg. 26,818 (1985).

60. Report on Transitional Provisions, *supra* note 42, at 16.

61. *Id.* at 19.

62. 50 Fed. Reg. 26,821 (1985).

63. Council Directive of 16 December 1986 on the Legal Protection of Topographies of Semiconductor Products, 1987 O.J. (L 24).

ten), gives the member states leeway to decide how to make their own laws conform to the specific goals demanded by the directive.⁶⁴ Notwithstanding the flexibility of this structure, all the member states eventually chose the *sui generis* approach — albeit grudgingly. Herman Cohen Jehoram, an European intellectual property professor, in a speech given at the Centre for Intellectual Property Rights in Leuven, Belgium, indicated that Europeans have acquiesced in enacting these forms of protection due to international pressure and the desire for expediency. He criticized “[t]he rough American technique of turning the national treatment rule inside out in order to pressure other countries into a national protection system nobody really cares for”⁶⁵ But in the end, he admitted that although the reasons may have been wrong, the *sui generis* approach was the “right solution.”⁶⁶

In sum, the United States’ “carrot and stick” approach has achieved *de facto* harmonization of chip protection laws among most of the DCs. In manufacturing this harmonization, § 914 has served one of the purposes of the SCPA. The treaty which this act envisioned as its ultimate success, however, has not even commenced.

III. MULTILATERAL EFFORTS

It is of course preferable to have a multilateral resolution, because then the problems engendered by a “patchwork” of regulation schemes can be avoided and standards can be applied globally. Not only will the United States benefit from a multilateral treaty, but other countries often favor this sort of agreement because the negotiations can then be carried on in a neutral arena, where every member may have a voice in the proceedings. This section will describe WIPO’s efforts and the possibility of GATT governing intellectual property rights.

The Berne Convention, despite its frequent revisions, proved unsatisfactory in the protection of chips. Many nations were unsatisfied because its intellectual property standards were too low and an adequate enforcement mechanism was absent from the convention. In addition, the traditional forms of intellectual property protection which the Berne Convention encompasses do not address the problems which are unique to the chip industry.⁶⁷ In a similar way,

64. TREATY ESTABLISHING THE EUROPEAN ECONOMIC COMMUNITY [EEC TREATY] art. 189.

65. Herman Cohen Jehoram, *Some Curious Problems Caused By Semi-Conductor Chip Protection: A European View*, 36 J. COPYRIGHT Soc’y U.S.A. No. 4, 295, 299 (1989).

66. *Id.*

67. See *supra* part I.

the Universal Copyright Convention⁶⁸ proved ineffective to protect chips because it is best applied to literary and artistic works. Moreover, although the United States is a signatory to this convention, it is administered by the United Nations Economic and Social Council ("UNESCO"), an United Nations subdivision of which the United States is no longer a member. Thus one of the two major players in the industry does not adhere to the convention.

A. WIPO's Attempt at Unification

WIPO demonstrated awareness of these deficiencies in existing forms of chip protection. Starting in 1985, several negotiating sessions were held regarding chip protection, and a first draft of a treaty was produced in 1987.⁶⁹ The sessions were adversarial and many changes were made on this original draft. Ultimately the fifth version was adopted and opened for signature on May 26, 1989.⁷⁰ Forty nations voted for the treaty, ironically, the dominant nations in this industry, the United States and Japan, voted against it and have refused to sign.⁷¹ As it stands, only Egypt, Ghana, Guatemala, Liberia, Yugoslavia and Zambia have signed the treaty.⁷² In the attempt to reconcile the concerns of both the DCs and the LDCs, no one has been satisfied.

The first drafts were heavily based on the SCPA and thus met with DC approval, but due to the objections of some LDCs principally India, Ghana, and Brazil, (other countries did not object so strongly — see Part IV *infra*) many changes were made in favor of the LDCs' positions before the final draft emerged. The main objections that the LDCs raised regarding the early drafts were that: 1) since Japan and the United States enacted their chip protection laws so that they did not have to submit disputes to an international body, the LDCs should not be forced to submit to one either — especially if the body is essentially controlled by the DCs;⁷³ 2) compulsory licensing should be allowed; 3) LDCs should get special treatment; 4) LDC technology is not advanced enough to benefit from reverse engineering, thus this is not of great importance.⁷⁴ These objections reflect the classic fear of LDCs that they may be losing some of their sovereignty by entering such agreements. WIPO responded by

68. Universal Copyright Convention, July 24, 1971, 25 U.S.T. 1341.

69. Draft Treaty on the Protection of Intellectual Property in Respect of Integrated Circuits, First Session, WIPO Document IPIC/CE/III/2 (Feb. 12, 1987).

70. Treaty on Intellectual Property in Respect of Integrated Circuits, May 26, 1989, 28 I.L.M. 1477 [hereinafter WIPO Treaty].

71. *U.S. Japan Refuse*, *supra* note 45.

72. Leaffer, *supra* note 6, 293 n.96.

73. *Third World Questions the Need for Integrated Circuits Treaty*, 34 Pat. Trademark & Copyright J. (BNA) 59 (May 21, 1987).

74. Ralph Oman, *WIPO Draft Treaty on Chip Protection* 37 Pat. Trademark & Copyright J. (BNA) 600, 601 (April 6, 1989).

amending the treaty to provide that disputes would go to the WIPO assembly. LDCs favored this solution because in the Assembly, decisions are made by the "one nation one vote" procedure and the LDCs often wield power disproportionate to their economic strength. Moreover, the treaty was changed to allow signatories to adopt either a *sui generis* or a traditional copyright approach.⁷⁵ Finally, other changes were made which are the subject of United States objections.

The United States objected to the final version of the treaty because, *inter alia*: 1) compulsory licensing is allowed; 2) there is no provision for compensation for innocent infringement; and 3) the dispute settlement process having been given to the WIPO Assembly is too "politicized."⁷⁶ Basically the DCs fear inadequate enforcement and insufficient minimum rights.⁷⁷ In addition they are exasperated with the "U.N.-style voting blocs"⁷⁸ in WIPO. These two sets of objections generally reflect the "North-South" schism in international relations, and are especially reflective of the debate over international intellectual property (not merely chip) protection in general. Resolution to this problem involves the entire structure of world trade and cannot be confined to chip protection issues alone. One way to begin this resolution process, however, may be to forge agreements on small subject-areas, such as chip protection. These agreements may lead to consensus in other areas.

WIPO's quagmire should not indicate that the entire effort has been a waste. WIPO undertook an effort in 1991 to compose an entirely new treaty.⁷⁹ Miguel Angel Emery, an Argentinean delegate to WIPO, indicated that some basic principles have been agreed upon: first, that *some form* of intellectual property protection should be enacted (even in the LDCs); second, that a single text would serve this purpose the best;⁸⁰ and third, that a chapter should be devoted to definitions in order to clarify concepts which might be foreign to certain legal systems.⁸¹ As basic as this may seem, these agreements are essential foundations for further elaboration. Thus, as the SCPA established the impetus to create multilateral unification of chip protection laws, WIPO has had success in both establishing a basis for such an agreement, and in clarifying the LDC

75. WIPO Treaty, *supra* note 70, at art 4.

76. *U.S. Japan Refuse*, *supra* note 45.

77. *PTO Announces Extension of Interim Chip Protection Orders*, 41 Pat. Trademark & Copyright J. (BNA) 107 (1990).

78. Emmert, *supra* note 25, at 1343.

79. *Some Questions Underlying the Draft Model Provisions for Legislation in the Field of Copyright — A Pragmatic Approach*, COPYRIGHT; MONTHLY REVIEW OF THE WIPO, September 1990, at 302 [hereinafter COPYRIGHT].

80. *Id.*

81. *Id.* at 303.

and DC positions. In Part V of this Note, some possible solutions will be proposed.

B. GATT's Possible Authority

The unilateral action and bilateral agreements mentioned earlier in Part II would arguably be in violation of the Most Favored Nation ("MFN") principle of the GATT.⁸² However, to date, the GATT does not govern intellectual property rights. How and indeed *whether* the GATT should govern intellectual property remains under debate since the Uruguay Round has not yet concluded.⁸³

Many LDCs have argued that GATT overextends its mandate if it purports to cover intellectual property, and that WIPO is the only organization competent to handle international intellectual property.⁸⁴ This objection is probably caused by the typical LDC wariness of the GATT. Many LDCs see the GATT as a "rich man's club" which is effectively controlled by DCs, and prefer to deal with WIPO where their sheer numerical dominance often carries the day.⁸⁵

The LDCs criticisms are often on target, however, because the DCs are frequently the ones who table the proposals and thus set the agenda. In addition, these proposals are often highly influenced by industrial lobbying groups in the DCs. This contention is certainly true with respect to international chip protection. Industrial groups from different DCs now combine forces to make themselves heard. The United States sponsored a meeting of "Friends of Intellectual Property" from March 7 to 11, 1988, at which twenty-two (mostly industrialized) nations and the EC sent representatives.⁸⁶ In addition, in June 1988, a consortium of three industrial associations: UNICE (a Brussels-based European business association), Keidanren (from Japan) and the Intellectual Property Committee (a coalition of thirteen United States corporations) together submitted to the GATT a suggested framework for intellectual property protection.⁸⁷ Thus,

82. GATT Treaty, *supra* note 31, at pt. I, art. I. This foundational tenet of the GATT agreement provides that any preferential trade treatment which is granted by one signatory to another signatory must be given to all signatories; i.e. once a member of GATT bestows an advantage on another member, it must accord all other signatories "no less favorable" treatment.

83. *Ministerial Declaration on the Uruguay Round*, GATT Doc. at 2 (Sept 20, 1986), available in LEXIS at 25 I.L.M. 1628 (1986).

84. *EC Proposal Covers Trade-Related Intellectual Property Rights*, 39 Pat. Trademark & Copyright J. (BNA) 490, 491 (April 4, 1990).

85. Gadbow & Richards, *supra* note 30, at 47.

86. Committee Report: Division I—Patents, Richard C. Witte, Chairman, Committee No. 102—International Patent Treaties and Laws, H. Dieter Hoinkes, Chairman, 1988 ABA Sec. Pat. Trademark & Copyright L. Rep. 31 (1988).

87. *U.S., Japanese, European Groups Call for GATT Intellectual Property Code*, 36 Pat. Trademark & Copyright J. (BNA) 209 (June 23, 1988).

a wholly private industrial lobbying group made a proposal to GATT which received serious consideration. It is remarkable that the LDCs are heard, let alone capable of stalling negotiation proceedings with this magnitude of economic power, internationally consolidated, having the power to set the agenda in opposition to the LDCs. It remains to be seen whether the LDCs objections will be given more consideration.

In addition, DCs responded to LDC objections by asserting that inadequate intellectual property protection and piracy is so detrimental to trade that it effectively causes a trade barrier, perhaps a mightier barrier than that caused by tariffs.⁸⁸ If this is true, then GATT is competent to deal with the subject since the intellectual property protection is "trade-related," and thereby within GATT's mandate.⁸⁹

Due to both private and public DC pressure, by the start of the Geneva Meeting in April 1989, the LDCs had finally accepted the GATT's applicability to intellectual property.⁹⁰ A subgroup of the GATT named the "Trade Related Aspects of Intellectual Property Rights" ("TRIPS") has assumed these responsibilities.⁹¹ Thus, the DC pressure tactics nullified another LDC objection — GATT's competence to govern intellectual property rights. Again, notwithstanding arguably heavy-handed tactics by the DCs, another basic obstacle to unification was overcome. An agreement was made as to the competent forum for negotiations. Unfortunately, the GATT negotiations "broke down" at the meeting in Brussels on December 7, 1990, mainly due to disagreement on agricultural issues, however, some recent reports on the negotiations have been optimistic.⁹² Thus, both GATT and WIPO have made foundational progress toward unification of chip laws, although both efforts are effectively stymied at present.

C. *Possible Cooperation Between GATT and WIPO*

WIPO and GATT are not necessarily mutually exclusive organizations. In fact, the Directors General of the GATT and WIPO agreed that GATT could be an appropriate forum for intellectual property issues.⁹³ It has been suggested that both organizations continue to

88. COPYRIGHT, *supra* note 79.

89. *India Accepts Principle of Policing Trade-Related Intellectual Property*, 3 *World Intell. Prop. Rep.* (BNA) 244-45 (1989).

90. *Framework Agreements Adopted April 8, 1989, At Midterm Review of Uruguay Round Negotiations Under General Agreement on Tariffs and Trade in Geneva*, *Daily Rep. for Executives* (BNA) at 12-13 (April 11, 1989).

91. *EC Proposal Covers Trade-Related Intellectual Property Rights*, *supra* note 84.

92. Dullforce, *supra* note 20.

93. Atlantic Council's Advisory Trade Panel, *The Uruguay Round of Multilat-*

do what they do best, and then try to coordinate their efforts.⁹⁴ WIPO's strength is in its academic expertise in the area of intellectual property. GATT's strength is in its flexible structure (there need not be unanimity to pass a resolution), its role as a forum for grievances and renegotiations, its dispute settlement mechanism, and the fact that it is the only set of widely agreed-upon rules for international trade. Perhaps most importantly, it possesses enforcement power through sanctions⁹⁵ because it is taken seriously by its members and it brings together high-level government officials who are able to bind their nations.⁹⁶ Additionally, the membership has not broken down into voting blocks.⁹⁷ It is not difficult to see how these two organizations complement each other. The GATT can serve as the "backbone" structure while WIPO can serve as the "brains." The delegates to WIPO have the expertise to advise or serve on GATT dispute resolution panels, indeed already some countries send the same delegates to both meetings.⁹⁸ This structure will avoid a wasteful "turf war" over subject matter, and will allow both organizations to combine their efforts to achieve unity of laws on chip protection.

IV. CURRENT DEVELOPMENTS

In the wake of the failed multilateral efforts at unification, and given the *de facto* harmonization of chip protection laws among the DCs, very little litigation over chip protection has been instituted.⁹⁹ As demonstrated by the international consortium of industry which approached GATT,¹⁰⁰ there has been a trend toward inter-firm alliances in the semiconductor industry within¹⁰¹ as well as across DC borders.¹⁰² Impetus for these alliances developed because of the accord already reached in addition to the industry's trend toward

eral Trade Negotiations: Policy Proposals on Trade and Services 63 (Leddy & Rein-stein 1987).

94. Emmert, *supra* note 25 at 1352.

95. Leaffer, *supra* note 6, at 298.

96. Kenneth W. Dam, *The Growing Importance of International Protection of Intellectual Property*, 21 *INT'L LAW.* 627, 636-37 (1987). *See also* Gadbar & Richards, *supra* note 30, at 28.

97. Leaffer, *supra* note 6, at 302.

98. Emmert, *supra* note 25, at 1376.

99. Robert L. Risberg, Jr., *Comment, Five Years Without Infringement Litigation Under the Semiconductor Chip Protection Act: Unmasking the Spectre of Chip Piracy in an Era of Diverse and Incompatible Process Technologies*, 1990 *Wis. L. Rev.* 241 (1990).

100. *See supra* note 87 and accompanying text.

101. *See, e.g.*, Peter Burrows, *A "Single Industry Voice" Gets Results in Chip Wars; U.S. Semiconductor Industry Agrees on Unified Goals and Objectives to Compete With Japanese Trade Practices*, 17 *Electronic Bus. Copyright* (Cahners) 11 (May 6, 1991).

102. *See, e.g.*, Risberg note 99, at 269 n.144.

highly specialized chips with specific applications. General-purpose, hence profitably copied, chips are no longer the latest technology.¹⁰³ Thus the market is becoming less conducive to piracy. In addition, United States chip manufacturers have seen the results of the collective power they wield, and have evolved into the major players in the negotiations. A unified approach is increasingly important given the state of the world economy and the shrinking United States defense budget upon which both United States and foreign producers heavily rely. The above factors, combined with the general clarification of rights under the SCPA, have caused litigation to appear risky and of questionable necessity.

A second trend which has developed is that the so-called "Newly Industrialized Countries" ("NICs")¹⁰⁴ have favored stronger intellectual property protection laws.¹⁰⁵ Since these countries are at the beginning stages of industrialization, they can appreciate the benefits of protecting intellectual property and know that if they provide adequate protection, they will attract foreign capital.

Meanwhile, the Commissioner of Patents continues to extend interim protection, and the United States recently renewed the § 914 authority.¹⁰⁶ In addition, further bilateral intellectual property accords providing *sui generis* chip protection have been reached with some of the formerly communist countries (such as Poland, Czechoslovakia, and Bulgaria) and even with Mongolia and Korea.¹⁰⁷ The United States is also conducting negotiations individually with Mexico, Thailand, and Yugoslavia.¹⁰⁸ So, at present, it seems that the bilateral methods have reached at least a temporary patchwork of harmonization of chip protection laws.

V. POSSIBLE MULTILATERAL SOLUTIONS

Multilateral agreement will provide uniform protection and a long-term solution. In addition, the United States could consolidate the progress it has made through the bilateral agreements and fulfill an original objective of the SCPA, *i.e.* to establish multilateral unification of chip laws (a treaty). Moreover, even if the industry is now

103. *Id.* at 275.

104. I will use this term to mean Taiwan, Singapore, Malaysia, Hong Kong, South Korea, Indonesia, and Mexico collectively.

105. Dam, *supra* note 96, at 635.

106. *See supra* note 46 and accompanying text.

107. Treaty Concerning Business and Economic Relations, Mar. 21, 1990, U.S. - Poland, S. TREATY Doc. No. 101-18, 101st Cong. 2d Sess. (1990); Agreement on Trade Relations, Apr. 12, 1990, U.S. - Czechoslovakia, 29 I.L.M. 904 (1990); Agreement on Trade Relations, January 23, 1991, U.S. - Mongolia, 30 I.L.M. 515 (1991); Henrik Hansen, *Korean Import Financing and Semiconductor Layout Designs*, 13 E. Asian Executive Rep. 6 (1991).

108. *Copyright Panel Reviews Bilateral and Multilateral Trade Developments*, 41 Pat. Trademark & Copyright J. (BNA) No. 1023, at 434 (March 21, 1991).

dominated by the parties who already agree on the *sui generis* approach, this does not necessarily mean that LDCs will remain outside of the market forever. Indeed, this industry may very well take the same path as other electronic industries and shift its production to LDCs. Finally, chip piracy entails international cooperation (between the pirates and the buyers), thus an international standard will discourage it. Unification of these laws remains a globally desirable objective.

A standard cannot be forced upon the LDCs, however, regardless of the economic power behind it. LDCs have realistic limitations in infrastructure and politics which discourage their acquiescence.¹⁰⁹ Their interests must be addressed or no accord will ever be reached. The DCs will only reap the advantages of consensus if they make some concessions and give the LDCs some opportunity to agree without "losing face" at home.

A. General Tactics for Achieving Unification

If DC's truly wish to achieve unification of laws protecting chips, they must address LDC objections from as many angles as possible but meanwhile maintain consistent arguments. The most basic assertion to emphasize is that the benefits of piracy are short term and that piracy discourages foreign investment in LDC infrastructure.

LDCs respond to this unfocused and theoretical proposition with the pragmatic objections that they lack the infrastructure to enforce chip protection. An equally pragmatic solution, however, can be achieved if the DCs are willing to make an initial investment in the technological infrastructure of the LDCs. This investment will pay off in the future in the form of greater protection and possibly lower production costs from switching production to the LDCs. The United States Patent office has recognized this possibility, and as recently as 1987 sent missions to countries (such as Brazil, Egypt, Indonesia, Iraq, Paraguay, the Philippines, Saudi Arabia, Singapore, Turkey, and Venezuela) to train the nationals and to develop local intellectual property protection programs.¹¹⁰ This long-term solution benefits both sides.

Sufficient protection will make DC firms more willing to transfer their technology to the LDCs who in turn will realize the benefits of advanced technology. In addition, with a sufficient technological base, the LDCs should be more willing to accept provisions for reverse engineering since they then will possess enough know-how to reap the benefits of the practice. These suggestions will certainly

109. See *supra* part I.C.

110. *Committee Reports — Debate on Resolution: Special Committees, Summary of Proceedings of the A.B.A. Annual Meeting, San Francisco, California August 8, 1987, 1987 SEC. PAT. TRADEMARK & COPYRIGHT LAW PROC. 74.*

aid the process of unification because, if the DCs themselves are willing to take a long-term view, the aid they offer and concessions they make will allow the LDCs to compromise.

Additionally, if in this spirit both sides will relax their rigid stances only slightly, it will not harm either one's interests to allow compulsory licensing only in severely limited circumstances. The DCs cannot force agreement; although the forceful tactics have established the rudiments of consensus, the final stages call for more subtle tactics.

B. *GATT's Ability to Achieve Unity of Laws*

Beyond taking a long-term view and assisting in development efforts, the DCs must utilize the multinational fora available. The TRIPS negotiations are an appropriate place for the DCs seeking unification of chip protection laws to continue their efforts.¹¹¹ As a caveat, however, chip protection involves concepts different from traditional intellectual property protection.¹¹² Just as a *sui generis* approach has worked the best in harmonization, this approach will probably work best to achieve unification as well.

An often suggested benefit of the GATT framework for negotiations is that since it involves many sectors of trade, larger agreements can be reached by making trade-offs in smaller sectors¹¹³ (i.e. an agricultural subsidy for a lower tariff on an industrial product). This does not necessarily help specific negotiations, such as unification of chip protection laws. As one United States GATT official put it "Nothing is agreed until everything is agreed."¹¹⁴ One of the main causes of the breakdown of the Uruguay round was the fact that agriculture — arguably the most controversial topic — was "linked" to the rest of the round. Therefore, the entire round "failed" regardless of consensus achieved in other subject-areas. If a small enough topic is explored, at least some parties are able to agree and objections can be clearly articulated. Within a small subject-area, further concessions can be made. Semiconductor agreements are a case in point. "Linking" broad categories merely complicates negotiations and risks large-scale failure.

This is not to say that a *sui generis* approach should be adopted in all cases involving new technologies. That would merely cause confusion and atomize agreements which have already been reached. Where already-established rules will suffice, they should be kept or strengthened.¹¹⁵ As explained earlier in *Part I*, adequate

111. See *supra* note 90 and accompanying text.

112. See *supra* part I.A.

113. Dam, *supra* note 96, at 636. See also Emmert *supra* note 25, at 1345.

114. *Failure of Gatt Talks Masks Gains in Key Sectors*, Bus. INT'L, December 24, 1990.

115. *Accord Lemberg*, *supra* note 4, at 375.

chip protection is not achieved by any traditional form of intellectual property protection, so a novel approach is appropriate here.

There are several approaches which a GATT chip agreement can take. The EC in its TRIPS proposal suggested that certain minimum standards of intellectual property should be observed.¹¹⁶ Unfortunately, dissatisfaction with this approach under existing conventions was one of the problems which spurred the adoption of the *sui generis* approach to chip protection in the first place.¹¹⁷ A second option is a two-tiered agreement whereby the DCs adhere to a high standard and the LDCs gradually rise to this standard. This solution is also unsatisfactory since LDCs may thereby "free-ride," that is, get the benefits of the agreement without making necessary concessions. Moreover, it is nothing more than a codification of the status quo "with an agreement to talk again later."¹¹⁸ Thus, neither of these proposals resolves the problems of unification within the chip industry.

A third, and arguably the best, type of agreement is to protect only signatories, and commit signatories to maintain sufficiently high standards; but the key difference is to allow compromise by providing escape clauses for emergencies. Non-signatories are denied the benefit of the agreed-upon protection. This seems the best overall approach. In this way, sufficient protection is ensured among signatories, but there is still room for negotiation. In addition, there should be provisions for ease in amendment, or perhaps for periodic review. A demonstrated strength of the SCPA was that it necessitated periodic attention and thus, could not fall into disuse or become obsolete. A living, changeable document will best serve the needs of this rapidly changing industry.

Finally, to reiterate, DCs should make certain their approach is uniform not only in WIPO and GATT but also regarding their bilateral agreements; otherwise, gains in one forum might undermine those in another, and the legitimacy of any one agreement may be questioned.¹¹⁹ If the above suggestions are followed, a coherent plan may be maintained.

In sum, there are four basic tools which may be used in achieving international unification of chip protection laws: 1) the present tactic of bilateral "stick-waving" and threats of limited access to DC markets; 2) the economic argument of long-term benefits; 3) training of personnel and development of LDC enforcement infrastructure; and 4) multilateral efforts at consensus on standards, concessions,

116. *Gatt Delegates Receive "Detailed" EC Intellectual Property Proposal*, 36 Pat. Trademark & Copyright J. (BNA) 278 (July 14, 1988).

117. See *supra* part I.

118. Emmert, *supra* note 25, at 1349.

119. Erstling, *supra* note 47, at 349 n.221.

and trade-offs.¹²⁰ With these in hand, in addition to the progress made so far, perhaps a global consensus can be achieved.

CONCLUSION

Although the SCPA has been criticized as a typical United States bullying device, the bilateral agreements reached via its transition clause have resulted in the harmonization of chip protection laws in the DCs. Meanwhile, multilateral efforts, although presently stalled, have nonetheless achieved agreement on foundational issues. Moreover, many nations are now realizing the benefits of intellectual property protection. What is needed now is a final effort to consolidate these gains and establish agreement. Unification of laws on semiconductor chips is a realistic possibility.

Kim Feuerstein

120. Gadbow & Richards, *supra* note 30, at 20.