Chip Protection in Europe

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1. INTRODUCTION

"Many years ago there was an Emperor who was so fond of new clothes that he spent all his money on dress. (...) He had a different suit for each hour of the day; and, as of any other king or emperor, one is accustomed to say, 'He is sitting in council', it was always said of him, The Emporor is sitting in his wardrobe'. One day two rogues, calling themselves weavers, made their appearance. They gave out that they knew how to weave stuffs of the most beautiful colours and elaborate patterns; the clothes made from which should have the wonderful property of remaining invisible to every one who was unfit for the office he held, or who was extraordinary simple in character"'.

Since 1986, Europe has to accept a new kind of industrial property law which has been "woven" by the United States Government and the EC Commission. The US chip industry which was afraid of the Japanese or Korean "threat" forced the US legislators to enact a sui generis system of chip protection. With the Semiconductor Chip Protection Act 1984 *(SCPA)*[2], a new kind of industrial property containing elements of patent, copyright and competition law has been created[3]. Additionally, the SCPA provides a new way of imposing international pressure. All nations must adopt the main elements of the SCPA. Otherwise, topographies and mask works of a foreign chip producer would not be protected in the United States. Furthermore, the SCPA only grants interim protection where a State convinces the U. S. Patent and Trademark Office that it is making *"good faith and reasonable progress"* towards providing protection on substantially the same basis[4].

1. Hans Christian Andersen, *The Emperor's New Clothes,* in: *Andersen's Fairy Tales,* London 1947, 307 et seq.
2. Tide III of Public Law 98-620 of November 8, 1984, now 17. U. S. C. Section 901 et seq.; *Industrial Property Laws and Treaties,* United States of America - Text 1-001.
3. For the content of die SCPA see die considerations of Stern in his chapter on Chip Topography protection in die USA; Richard H. Stern, *Semiconductor Chip Protection,* New York 1986; David Ladd, David E. Leibowitz, Bruce G. Joseph, *Protection for Semicon ductor Chip Masks in the United States,* Munich 1986; Charles N. Quinn, 'Protecting Se miconductor Chips in U. S. ', *La Nouvelles,* September 1987, p. 95; Wade Woodson,
   • Douglas C. Safreno, The Semiconductor Chip Protection Act of 1984', / *Computer & 'High Technology Law Journal (Comp. & High Techn. L. J.)* 7 (19, 85).
4. .....Section 902 (a)(l)(2).

These provisions led to a legislative race against time in all parts of the world. In Europe, the EC member states tried to establish harmonized chip protection legislation conform with the SCPA. Other European states, however, resisted the exhortative behaviour of the United States and created their own way to protect chips.

2. THE LEGAL SITUATION WITHIN THE EC

After interim protection in the Unites States for nationals and domiciliaries of EC member states[5] had been accorded to the EC Commission until November 8, 1987, the EC authorities hastefully prepared a new Directive for chip protection. The first proposal was published in December 1985[6]. It was examined by the Economic and Social Committee, and the European Parliament[7]. Due to the reports of these two bodies and comments from the member states, the proposal had to be changed on several important points[8]. Finally, the Directive on the Legal Protection of Semiconductor Products (87/54/EEC) was adopted by the EC Council on December 16, 1986[9].

The Directive is based on Article 100, paragraph 1 of the EEC Treaty, and is binding on all member states. Article 11(1) of the Directive obliged all EC member states to implement this Directive by November 7, 1987. Up till now, all member states, with the exception of Greece, have enacted or adopted implementing legislation[10]. On May 28, 1990, Greece was sent a reasoned opinion by the EC Commission, giving it two months to comply with Community law. After that deadline, the Commission has

5. The first Interim Order has been issued on September 12, 1985 (51 *Fed. Reg.* 30690).

6. Proposal of the Commission (COM) (85) 775 final 12 (85/c360/02); *cf.* [1985] 11 *European Intellectual Property Review (EIPR)* 331-335.

7. *See Official Journal of the European Communities (OJ) C* 189/5-7 of July 28, 1986.

8. For the history of the EEC directive *cf.* Christopher J. Millard, *Protection in EEC Member States of Semiconductor Product Designs*, Paper presented at a conference on Licensing and Protection of Computer Software in Europe, Brussels, European Study Conference, September 20, 1989; Ingwer Koch, 'Rechtsschutz der Topograhien von mikroelektronischen Halbleitererzeugnissen', *Computer und Recht* 1987, 77; Thomas Hoeren, 'EEC computer law', in: Chris Reed (ed.), *Computer Law*, London 1990, 240; Corien Prins, 'The Dutch answer to the need for protection of chips', *Computer Law & Practice* 1987, 169; Thomas Dreier, 'Development of the Protection of Semiconductor Integrated Circuits', 19 *International Review of Industrial Property and Copyright Law (IIC)* 427 (1988).

9. *OJ*, L 24/36 of January 27, 1987.

10. *See* the table on the implementation of the EC chip protection Directive prepared by Christopher Millard (Clifford Chance/London).
Another table, made by A. P. Meijboom, can be found in *Computerrecht* 1988, 28.

reserved the right to refer the matter to the Court of Justice". This behaviour of Greece could lead to the situation that the EC Commission may not apply for a US Presidential Proclamation, but for yet another Interim Order.

2. 1. Obligatory provisions

The Directive contains some elements which had to be adopted by the national legislators within the European Cummunities:

2. 1. 1. The object of protection

The core element of the Directive, *"topography"*, is defined in Article 1 as *"a series of related images, however fixed or encoded; (i) representing the three-dimensional pattern of the layers of which a semiconductor product is composed; and (ii) in which series, each image has the pattern or part of the pattern of a surface of the semiconductor product at any stage of its manufacture"*.

Unlike the SCPA, this definition does not use the term *"mask work"* to describe the object of chip protection. Therefore, it is open for future technical developments in the chip industry where masks will be replaced by "direct writing" techniques[12].

A topography is capable of protection if it is *"the result of its creator's own intellectual effort and is not commonplace in the semiconductor industry"* (Article 2 (2)). This standard of "originality" was interpreted as being the main reason for the *sui generis* protection system. It is said that copyright and patent law require a very high standard of originality or inventiveness. With regard to this standard, most topographies will remain unprotected under "traditional" industrial property law[13].

However, the scope of conventional protection for chip designs has never been analyzed in detail[14]. Perhaps it could be shown that the chip

11. *Cf.* Press Release of the EC Commission of May 28, 1990 - *IP* (90) 416.

12. *Cf.* E. Abraham, C. T. Seaton, S. D. Desmond, The Optical Computer', *Scientific American* 1983, 63; W. G. Oldham, The Fabrication of Microelectronic Circuits', in: D. Flangan (ed.), *Microelectronics,* San Francisco 1977, 41; OECD (ed.), *The Semiconductor Industry: Trade Related Issues,* Paris 1985.

13. *Cf.* Thomas Dreier, "L'evolution de la protection des circuits integres semi-conducteurs', *Revue Internationale du Droit d'Auteur (RIDA),* no. 142 (1989), 23 *el seq.*

14. A first attempt may be found in: R. J. Hart, Legally Protecting Semiconductor Chips in the UK, [1985] 9 *EIPR,* 258; Oxman, 'Intellectual Property Protection and Integrated Circuit Masks', 20 *Jurimetrics Journal (fur. J.)* 405 (1980).

protection acts use the same standard of protection as copyright or patent law[15]. For instance, the assumption that the German law has set up a high standard of originality may be doubted. The German Federal Court of Justice is only reluctant to protect software under copyright law. With regard to other works, the German courts have very generously adapted copyright law. Telephone or adress books, catalogues, musical potpourris, collections of letters, films or technical drawings are held to be capable of copyright protection under German law if their arrangement or structure is not commonplace (idea of the *"Kleine Münze")*[16]. This conception very much resembles the requirements as found in art. 2 (2) of the Directive.

2. 1. 2. The question of nationality

The right holder must be a national of an EC member state or has to start the commercial exploitation within the EC. Otherwise, the protection depends on special declarations of the member states in agreement with the Commission (Article 3). So far, the EC Council has extended the legal protection especially to the United States, the EFTA countries and Japan[17].

The decision of the EC authorities to integrate material reciprocity in the Directive contradicts the principles of industrial property law. For centuries, the national treatment principle has been regarded as the corner stone of international patent and copyright law[18]. Inventions and copyright works have been protected irrespective of the nationality of their creators. This concept of protection was based upon the idea that creativity and originality are essential elements of human nature and should therefore be protected as the fundamental rights of each individual.

Starting with the SCPA, this rule was however set aside. The US chip industry, afraid of its foreign competitors, has succeeded in integrating

15. The copyrightability or patentability of microchips has been considered by Jean-Paul Triaille, ALAI-Report Belgium, in: ALAI Canada (ed.), *L'informatique et le droit d'auteur*, Quebec 1990, 97.

16. *See* RGZ 81, 120, 123; *RGZ* 143, 412, 416 et seq.; *BGHZ* 31, 308, 311 *(Alte Herren);* BGH, *GRUR* 1961, 631 *(Telefonbuch);* BGH, *UFITA* 51 (1968), 315, 318 *(Gaudeamus igitur);* BGH, *GRUR* 1981, 267, 268 *(Dirlada);* G. Schulze, *Die kleine Münze und ihre Abgrenzungsproblematik bet den Werkarten des Urheberrechts,* Freiburg 1983.

17. Council Decision (EEC) 87/532, *OJ* L 313/22 of November 4, 1987; Council Decision (EEC) 88/311, *OJ* L 140/13 of June 7, 1988.

18. *See* Th. Dreier, National Treatment, 'Reciprocity and Retorsion - The Case of Computer Programs and Integrated circuits', in: Friedrich-Karl Beier and Gerhard Schricker (ed.), *GATT or WIPO? New Ways in the International Property of Intellectual Property,* Weinheim 1989, 63, 70 et seq.

the protectionist and dictatorial system of material reciprocity within the SCPA *(supra)*. This system uses foreign chip creators as pawn to force the native country to change its legislation.

It may be argued that the EC Directive had to adopt the reciprocity rule in order to satisfy the US authorities, and to get the US proclamation under Sect. 914 (a) of the SCPA. Several states, however, have nevertheless chosen for the national treatment principle, and yet received the desired US proclamation. For instance, in Japan chip protection has been extended to citizens and foreign nationals alike[19].

2. 1. 3. Exclusive rights

Article 5 provides the right holder with the exclusive right to authorize or prohibit the reproduction, commercial exploitation[20], and importation of his topography. This right is yet restricted in some respects.

2. 1. 3. 1. The exhaustion doctrine

The exclusive rights to exploit or import a semiconductor product are exhausted after the product has been put on the market in a member state by the person entitled to authorize its marketing or with his consent (art. 5 (5)). This rule refers to the traditional "exhaustion doctrine".

2. 1. 3. 2. Reverse Engineering

The reproduction of a topography for private, non-commercial purposes and for analyzing or evaluating its concepts cannot be prohibited by the right holder. Even the development of a new topography based on such an analysis does not infringe on the exclusive reproduction right of the author if it is the result of the creator's own intellectual effort *(reverse engineering)*.

As Hart has already pointed out, there are some discrepancies between the reverse engineering provisions layed down in the US Semiconductor Chip Protection Act and those of the EC Directive. In the U. S., reverse

19. *Cf. Outline of the Japanese System for Protection of the Circuit Layout of a Semiconductor Integrated Circuit*, Japan 1988. *See*, the study *"Kaisetsu Handotai sysuseki kairo-ho"* (Act concerning the Circuit Layout of the Semiconductor Integrated Circuit), Tokyo 1987.

20. In the Netherlands, the exlusive rights include any kind of exploitation of a protected topography, even if it is not commercial. Therefore, art 1 (e) forbids to exploit a topography without the consent of the right holder.

engineering permits the incorporation of a first chip into another original mask work, while under the Directive, it is only permissible to create a new 'original' topography on the basis of the analysis or evaluation of another topography[21].

In Europe, this exception has led to considerable debate. The discussion focusses on the question whether reverse engineering is allowed under 'traditional' patent or copyright law. Some authors state that reverse engineering is a new principle of chip protection law[22]. This view has, however, in legal doctrine been rejected by various authors. They try to demonstrate that reverse engineering has to be regarded a traditional rule of industrial property law. In their view, patent law has always permitted the analysis of a protected invention and the use of the results of this analysis to produce a "new" (original) invention. Even in copyright law, a protected work may be analyzed, the results of which may be used in order to create a individual work[23].

2. 1. 3. 3. Innocent infringement

An "innocent infringer" may commercially exploit any semiconductor product even if the product is made or distributed by chip pirates. The Directive defines an "innocent infringer" as a person who acquires a semiconductor product and does not know (or has no reasonable grounds to believe) that the product is protected by an exclusive right (art. 6). The innocent infringer has to pay, however, an adequate remuneration for acts committed after he knows or has reasonable grounds to believe that the semiconductor product is protected.

This provision leads to some difficulties and may cause many misunderstandings. When does a person have *"reasonable grounds"* to believe in the legal status of a chip as being protected? In those member states who have introduced a registration system, the answer to this

21. *Cf.* RJ. Hart, 'Semiconductor Chip: Reverse Engineering Revisited", [1989] 4 *EIPR,* 111.

22. *Cf.* RJ. Hart, 'High Technology 'Reverse Engineering' The Dual Standard', [1987] 5 *EIPR* 139; Klaus-Albert Bauer, Reverse Engineering und Urheberrecht, *Computer und Recht,* 1990, 89; Angelika Schnell, Anna Freca, 'Reverse Engineering', *Computer und Recht,* 1990, 157.

23. *See,* Thomas Hoeren, 'La loi allemande sur la protection des semiconducteurs du ler novembre 1987', *Lamy Droit de l'informatique,* February 1989, 9; Ernst Holzinger, 'Halbleiterschutz und Urheberrecht', *EDV & Recht,* 1989, 12; Jerôme Huet, Herbert Maisl, *Droit de l'informatique el des Telecommunications,* Paris 1989, 369, note 4; Michael Lehmann, "Freie Schnittstellen ("Interfaces") und freier Zugang zu den Ideen ("Reverse Engineering")', *Computer und Recht,* 1989, 1057; Michael Sucker, 'Lizenzierung von Computer-Software', *Computer und Recht,* 1989, 353 and 468.

question is simple. The seller of a chip, especially the professional chip distributor, has to check the register. But what if the member state has opted for the copyright approach toward chip protection, without providing for any registration of protected chips? Besides, what is to be regarded an *"adequate remuneration"?* Such a remuneration may be defined by construing a fictitious licence between the right holder and the infringer, and defining the reasonable royalty payment under this licence. The amount of remuneration may, however, also be determined by reference to the profit made by an infringer.

Finally, does the innocent infringement rule also apply to the successors in title of the *bona fide* purchaser (as was held in the chip protection acts in Luxembourg[24] and Spain[25])?

2. 2. Discretional provisions

The EC authorities have not succeeded in establishing a uniform chip protection law within Europe. After the publication of the first proposal for a Directive, the the governments of the member states were not unanimous with regard to the very nature of chip protection. Several states argued that a topography may be protected, similar to copyright, upon creation. Other states, however, regarded chip protection as a kind of industrial property protection and, therefore, dependant upon registration. This ambivalent attitude led to major differences between the various national chip protection acts.

2. 2. 1. Optional registration

According to the Directive, the EC member states have the option of requiring registration and, additionally, the deposit of materials describing or exemplifying the topography (art. 4).

The copyright approach toward chip protection was adopted by the United Kingdom, Ireland[26] and Belgium[27]. These states established an

24. Act of December 29, 1988, *Memorial* A Nr. 74 of December 30, 1988, 1536.
25. *Cf.* proyeto de Ley sobre proteccion iuridica de las topografias de los productos semiconductores, *Boleton Oficial de las Cortes Generates,* III Legislature serie A, Num. 59-1. November 26, 1987.
26. European Communities [Protection of the Topographies of Semiconductor Products Regulations] 1988, *Statutory Instruments (S. I.)* No. 101 of 1988.
27. Wet betreffende de rechtsbescherming van topografieen van halfgeleiderprodukten. *Cf.* J. Keustermans, 'Belgisch wetsontwerp voor de juridische bescherming van chips',

unregistered right. In the United Kingdom, the legislator was unanimous on the very nature of chip protection. Initially, 1987[28], it enacted the Semiconductor Products (Protection of Topography) Regulations in 1987. These regulations, which very much resembled the EC Directive, have been replaced by the Design Right [Semiconductor Topographies] Regulations 1989[29]. These Regulations implemented a modified version of the design right It differs on various points from the SCPA and the EC Directive. The protection is extended to any design document for a semiconductor product, i. e., *"any record of a design, whether in the form of a drawing, a written description, a photograph, data stored in a computer or otherwise"* (section 263 (1)). These documents are protected against any importation or commercial dealing under the condition that they are not commonplace. The regulations do not define originality in terms of *"the creator's own intellectual effort"*. Furthermore, the configuration of the interfacing area of the topography and its structure in electronic form are not protected because they may fall within the exception of section 213 (3) (a) and (b).

Most EC countries have followed the second option and adopted the registration system[30]. Thus, the creator of topographies has to apply for registration at the national patent office or (in Spain) alternativately with the Provincial Directorates of the Ministry of Industry and Energy. In addition to the registration, material identifying or exemplifying the topography must be deposited with a public authority. Material deposited is, however, not made available to the public as it is regarded as a trade secret. The registration and deposit of topographies has to be paid for by the right holder. The fees differ from approximately $ 25 up to $ 400.

Computerrecht, 1989, 157; 0. Vandergheynst, 'Le projet de loi beige concernant la protection juridique des topographies de produits semi-conducteurs', in: F. Gotzen (ed.), *Chip Protection - La protection des Circuits intégrés*, Brussels 1990, 81.

28. Semiconductor Products [Protection of Topography] Regulations, *S. I.* 1987 No. 1497.
Cf. Robert J. Hart, 'Questions raised on legally protecting semiconductor chips in the UK', [1986] 2 *YLCT* 93; Philippa Perry, 'The semiconductor products (protection of topograhies) regulations 1987', *Computer Law & Practice*, November/December 1987, 56.

29. Design Right Semiconductor Topograhies Regulations 1989, *S. I.* 1989 No. 1100. *Cf.*
Robert J. Hart, Chris Reed, 'Design Right and Semiconductor Chip Protection', in: Chris Reed (ed.), *Computer Law*, London 1990, 128 *et seq.*

30. *See* Thomas Dreier, *Mask Work, Circuit Layout, Layout-Design, Topographie: Die Vorschriften der Anmeldung und Registrierung - Ein internationaler Vergleich*, Paper delivered at the Frankfurter Symposien zum EDV-Recht, November 20, 1987 (to be published).

2-2. 2. Duration of the right

Due to the divergent structure of the various national chip protection acts, the term of protection differs from country to country. As for those states that have opted for the patent law approach, the commencement of protection has been defined according to the EC Directive. The protection shall last at minimum ten years from either the registration date, or the date of the first commercial exploitation (Article 7 (3)). However, if a topography has neither been commercially exploited or registered within a period of fifteen years from first fixation or encoding, all rights lap (art. 7 (4)).

In Netherlands[31], the chip protection act provides that all rights lap already if within two years after commercial exploitation no deposit of the topography has been effected.

With regard to those states who adopted the copyright approach, the Directive only provided that the exclusive rights shall subsist for 10 years from the end of the year in which the topography is first commercially exploited anywhere in the world (art. 7 (3)) and that all rights lapse within fifteen years after first fixation or encoding under the conditions of art. 7 (4). This provision has been adopted by Ireland and the UK. In contrast, Belgium provides for encoding or first fixation as date of commencement of protection.

2. 2. 3. Right to Protection

According to the Directive, the right to protection shall belong to the creators of the topographies of semiconductor products notwithing special contractual provisions (art. 3 (1)). The member States may, however, deem the employer or commissioner to be the holder of the right in the course of employment or in case of *"commissioned topographies"* (art. 3 (2)). These options were used by most member states (the former Federal

31. Regelen inzake de bescherming van oorspronkelijke topografieen van halfgeleiderprodukten, October 28, 1987, *Staatsblad* 1987, 484; *Industrial Propety Laws and Treaties*, Netherlands - Text 1-001. As regards the history of the Dutch Act *see Kamerstukken* 1986-1987, 19 919.
Cf. P. B. Hugenholtz, 'Juridische bescherming van chips', *Bijblad bij de Industriele Eigendam (BIE),* 1985, 127 et *seq.;* H. Cohen Jehoram, 'Chipsbescherming onder de Pax Americana', *Informatierecht/AMl* 1986, 23; Alfred P. Meijboom, 'Sui generis bescherming voor topografieen van halfgeleiderprodukten", *BIE* 1987, 318 *et seq.;* J. M. Meijer-Van der Aa, 'De wet van 28 October, houdende regelen inzake de bescherming van oorspronkelijke topografieen van halfgeleiderprodukten', *Computerrecht,* 1988, 20.

Republic of Germany[32], Ireland, Italy[33], Luxembourg and the U. K.). In Spain, the question of whether the employer owns the rights of his employees has been regarded a problem of traditional law on employee inventions (Title 4 of the Workers Inventions Law of November 1986). The Dutch act only provides rules for the problem of employment. In the Netherlands, however, the employee expressly retains the right to be named in the registration[34]. The rights in commissioned topographies are held to be owned by the commissionee.

Denmark[35] and France[36] generally did not use these options. There, all rights with regard to the topography generally belong to the employee or commissionee as creator[37].

2. 2. 4. Topography Notice

According to art. 9, semiconductor products using topographies may carry the indication "T" where the legislation of member states provide a topography notice. This option has only been used by France, Italy, Luxembourg, Portugal[38] and Spain.

32. Gesetz über den Schutz der Topographien von mikroelektronischen Halbleitererzeugnissen (Halbleiterschutzgesetz) of October 22, 1987, *Bundesgesetzblatt* I, 2294; *Industrial Property Laws and Treaties* - Federal Republic of Germany - Text 1-004.
Cf. Bernd Geissler, *Halbleiterschutzgesetz,* Cologne 1988; Thomas Hoeren, *Der Schutz von Microchips in der Bundesrepublik Deutschland,* Munster/New York 1988, 15; Ingwer Koch, "Rechtsschutz der Topographien von mikroelektronischen Halbleitererzeugnissen. ', *Neue Juristische Wochenschrift,* 1988, 2446.

33. Legge recante norme per la tutela dei programme per elaboratore e della topografia di
prodotti a semiconduttori of February 21, 1989, *Gazzetta ufficiale della Repubblica Italtana,* Serie generale Nr. 52 of March 3, 1989, 3.

34. *See* Alfred P. Meijboom, Das niederländische Gesetz fiber den Schutz von
Halbleitertopographien, *Gewerblicher Rechtsschutz und Urheberrecht Internationaler Teil (GRUR Int.),* 1988, 923, 926.

35. Act of December 9, 1987, *Industrial Property Laws and Treaties* - Denmark, Text 1-001.

36. Law No. 87-890 du 4 novembre 1987 relative a la protection de topographies de
produits semi-conducteurs et a I'organisation de l'Institut national de la propriété industrielle, *Journal officiel de la Republique francaise* of November 5, 1987, 12920; *Expertises* No. 97, July/Agust 1987, p. 256; *Industrial Property Laws and Treaties* - France, Text 1-002.
See Jacques Dragne, 'La nouvelle reglementation francaise', in: La Protection Des Produits Semi-Conducteurs, *Colloque de 1'IRPI* (Paris, 15 décembre 1987), Paris 1988, 1 et seq.; Jean Foyer, André Bertrand, 'La proposition de loi relative a la protection des topographies', *Expertises* Nr. 96, June 1987, 233 et seq.; Jerôme Huet, Herbert Maisl, *Droit de I'informatique et des Telecommunications,* Paris 1989, 368.

37. This rule contradicts with art. 45 of the French Law No. 85-660 of July 7, 1985
whereby the rights with regard to computer programs are conferred upon the employ er.

38. Law 16/89 of June 30, 1989.

2. 2. 5. Compulsory Licensing

The Council Directive allows a member state to provide the use of compulsory licences for the sole reason that a certain period of time has elapsed.

Germany, Ireland, the Netherlands and the U. K. have not chosen this option. In these states, compulsory licenses will only be granted in special competition cases and under patent law.

However, most EC member states made use of the option (Denmark, France, Italy, Luxembourg, Portugal, and Spain). These states have choosen different ways of introducing compulsory licensing. In France, Italy, Portugal and Spain, non-voluntary licenses can be granted for the purposes of vital national interest or military defence. Additionally, Italy, Spain and Portugal provide compulsory licensing with regard to the public interest. Denmark allows compulsory licensing (granted by the Maritime and Commercial Court) where the right holder does not put his semiconductor product on the market in spite of suitable remuneration.

2. 2. 6. Sanctions

The establishment of effective sanctions against chip piracy is one of the crucial questions of chip protection law. The mere existence of different levels of sanctions will inevitably promote the establishment of 'piracy havens' within Europe. However, the question of remedies and penalties has been underestimated by the EC authorities. This is demonstrated by the EC Directive, which has left the choice of remedies and penalties to member states. Consequently, some states did not include any provision on sanctions in their national chip protection act (France) or simply referred to patent law sanctions (Luxembourg, Portugal, Spain). Other states developed a complex system of sanctions ranging from damages, injunctions, accounts to criminal punishment (Denmark, the former

Federal Republic of Germany, Ireland, Italy, Netherlands, U. K.). In detail, this system is characterized by severe national differences[39].

39. *See* H. W. K. Kaspersen, 'Enige beschouwingen over de strafbepaling in de nieuwe *chipwet', Nederlands Juristenblad(NJB),* 1988, 156.

3. THE LEGAL SITUATION OUTSIDE THE EC

Some non-EC states (such as Austria[40] and the former German Democratic Republic[41]) have decided to establish a chip protection law similar to the SCPA and the EC Directive. These laws include:
- the introduction of a sat *generis* right granted on registration;
- the admissibility of reverse engineering and innocent infringement;
- the material reciprocity principle.

However, Sweden, Finland, Norway and Switzerland have been very reluctant to follow the principles set by EC Directive. These countries created, or intend to create, a different system for chip protection.

3. 1. Sweden

Sweden has been the first European country to enact special regulations for the protection of microchips. First, the Swedish Government set up a Commission which investigated the ways of protecting computer technology under copyright law. This Commission emphasized in its report (published in 1986) that semiconductor products may be efficiently protected under traditional copyright law. A *sui generis* protection with regard to chips was held to be unnecessary[42]. Unfortunately, the legislature did not follow this recommendation. The

40. Bundesgesetz vom 23. Juni 1988 über den Schutz der Topographien von mikroelektronischen Halbleitererzeugnissen (Halbleiterschutzgesetz - HlSchG), *BGBl* Nr. 372/1988; *BIPMZ* 1988, 304; *EDV & Recht* 1989, 22; *Industrial Property Laws and Treaties* - Austria, Text 1-001.
Cf. Markus Andreewitch, 'Rechtsschutz fur Mikrochips in Österreich', *EDV & Recht,* 1989, 8; Gunter Auer, 'Der Schutz von Micro-Chips nach Österreichischem Recht', *EDV & Recht,* 1987, 20; Norbert Marterer, 'Halbleiterschutz in Österreich', *sterreichische Blatter fur qewerblichen Rechtsschutz und Urheberrecht* 36 (1987), No. 6, 1; Moritz Röttinger, 'Aktivitäten zum Halbleiterschutz in Österreich', *Informatik und Recht,* 1987, 445.

41. The Bin ("Verordnung über den Schutz von Topographien integrierter Schaltkreise") of January 24, 1989 has been kept secret and will not be enacted because of the unification process (my special thanks to Prof. Dr. sc. iur. Felix Weber (Ilmenau) for making the draft available).
The unification contract between the FRG and the GDR of 31 August 1990 provides that the chip protection act of the FRG has to be adapted by the FRG. *cf. Bulletin des Presse- und Informationsamtes der Bundesregierung,* September 6, 1990 Nr. 104, 930. For a discussion of the situation in the GDR *see,* J. Adrian, N. Kolle, D. Wicht, 'Schutz der Computerprogramme (unter Einschluss des Schutzes integrierter Schaltkreise)', *Der Neuerer* 2, 1986 B, 27; Richard Osterland, *Rechtsfraqen der Kooperation, des Schutzes und der Stimulierung von Softwareleistungen und-ergebnissen,* Dresden 1986, 91.

42. *Cf.* Proposed Copyright Reform in Sweden: The Swedish Copyright Committee Report, *Software Protection,* December 1986, 13.

Swedish Act on the Protection of the Layout-Design in Semiconductor Products entered into force on April 1, 1987[43]. The Swedish Act protects the layout-designs in their two-dimensional forms (drawings and masks) and in their threedimensional forms (semiconductor products). Under the Act, the creator of the layout-design has the exclusive right to copy the design, to transfer it onto or into a material support, and to make the design available to the public (Sect. 1 (1)). Further, the Act contains, provisions on innocent infringement and the exhaustion of rights (Sect. 3).

The act lacks a provision on reverse engineering. Instead, it provides that copies may be made for teaching on, or analysis of, the design. The reproduction of single copies for private use is also allowed (Sect. 2 (1)). As the Swedish delegation at the WIPO Session stated[44], reverse engineering may be regarded as lawful copying for the purpose of analysis. Hence, a special provision was considered unnecessary. The Swedish legislator has opted for protection without any formalities, similar to the position under copyright law. The layout design will be protected upon its creation. Protection is available up till the end of the 10th year after the year when the layout-design was first commercially exploited (Sect. 1 (2)).

The sanctions layed down in the act are more severe than those of the EC Directive. For instance, an infringer is held to be liable for damages even if he has acquired a topography or semiconductor product in good faith. The innocent infringement doctrine has only been used to protect an infringer from surrender and destruction of his unlawful copies.

Apart from these very innovative characteristics, the Swedish act contains two regrettable elements:

- protection has only been extended to layout designs created by Swedish nationals or domiciliaries, and to layout designs first distributed in Sweden. Other foreign layout designs may only be protected unter the condition of a corresponding government proclamation on the basis of material reciprocity[45].
- The Swedish Copyright Act has been amended in that layout designs

43. Lag om skydd for kretsmonster i halvledarprodukter, *Svensk författningssamling SFS* 1986: 1425 of January 20, 1987; *Industrial Property Laws and Treaties* - Sweden, Text 1-002.
See, for a brief explanation of the act, WIPO Document IPIC/CE/III/INF/1 Add., and the considerations of Gunter Karnell, 'Circuitry Design Protection in Sweden', *ICLA*, 1987, 26.

44. *Cf.* WIPO Doc. IPIC/CE/III/11, nr. 11.

45. Sect. 11. In the meantime, the Swedish legislature has published the "Regulations
Concerning the Application of Act No. 1425 of December 1986 in Relation to Other Coutries" of March 7, 1987. This Regulation extends protection to citizens of Japan and the United States.

protected by the Semiconductor Protection Act are not copyrightable[46].

In spite of the "originality" of the Swedish provisions, the act has been accepted by the United States as corresponding to the requirements under the SCPA.

Meanwhile, Finland[47] and Norway[48] seem to adopt the Swedish model in their chip protection law. Thus it appears that a uniform Scandinavian way of chip protection is going to be established.

3. 2. Switzerland

Chip protection has been regarded by the Swiss Government as a matter of competition law. Consequently, the Swiss delegate at the second WIPO Session[49] stated that chip piracy constitutes an unfair act according to Article 5 (c) of the new Unfair Competition Act[50]. This Article prohibits the appropriation and exploitation of another's marketable product *"as such by means of a technical reproduction process without adequate personal expenditure".*

In the meantime, the Swiss legislature has drafted a new topography act, which has been presented to the Parliament on June 19, 1989[51]. The draft contains all characteristic elements of the EC Directive and resembles the German Chip protection act. This hasty retreat may only be regretted.

46. Legislative Amendment No. 1426 of December 18, 1986, amending article 10 of the Swedish Copyright Act of 1960 (No. 729).

47. State Copyright Committee, Propsal for a law concerning the right in the layout-design of an integrated circuit of April 8, 1987 (unpublished).
See the report of Rainer Oesch (Finnish ALAI-group) at the ALAI Congress 1989 in Canada, reprinted in ALAI Canada (ed.), *L'informatique et le droit d'auteur,* Quebec 1990, 180.

48. *See* the Government Report on the Protection of integrated circuits, Oslo 1986 (unpublished).

49. *Cf.* WIPO Doc. IPIC/CE/II/8.

50. Federal Law against Unfair Competition of December 19, 1986, *BBl.* 1987 I, 27;
GRUR Int. 1987, 159.

51. Bundesgesetz fiber den Schutz von Topographien von integrierten Schaltungen,
Entwurf vom 19. Juni 1989.
Cf. Thomas Dreier, 'Der Schutz von Mikrochips: Internationale Entwicklung und Regelung im Entwurf der III. Expertenkommission zur Revision des schweizerischen Urheberrrechtsgesetzes vom 18. Dezember 1987', *SMI* 188, Fasc. 1/2, 37 et seq.

4. CONCLUSION

At the present time, chip protection in Europe has to be characterized as a jigsaw puzzle. Patent, copyright, and even the competition approach, all possible ways of protecting microchips may be found within Europe. Considering this variety, the EC Directive on the protection of semiconductor products has failed its aims. The Directive does not establish uniform basic principles of chip protection within Europe. Instead it only has, as Cohen Jehoram[52] characterized it, *"disharmonizing"* effects. In great haste, the US authorities and the EC Commission have "woven" a new way of protecting chips which is unnecessary, shallow and ineffective. The European states have been forced to adopt this way blindly. And that is how the fairy tale of the emperor and his new clothes ends:

> "The Emperor caused large sums of money to be given to both the weavers, in order to begin their work at once. So the pretended weavers set up two looms, and affected to work very busily, though in reality they did nothing at all.
> Some days later, the Emperor himself went to the crafty impostors; but he, too, could not discover the least bit of thread on the looms. 'How is this?', said the Emperor to himself. 'I can see nothing! this is indeed a terrible affair? Am I a simpleton, or am I unfit to be an Emperor?'- So, he smiled most graciously and ordered that some new clothes made from this splendid material, for the approaching procession. Next day, the Emperor walked under his canopy in the midst of the procession, through the streets of his capital wearing his Invisible' clothes. No one would allow that he could not see these much-admired clothes, because, in doing so, he would have declared himself either a simpleton or unfit in his office".

And this procession still goes on, with a naked Emperor and the lords of the bedchamber holding a train, although, in reality, there is no train to hold.

52. H. Cohen Jehoram, The European Commission pressured into a 'disharmonising' Directive on chip protection', [1987] 2 *EIPR* 35.

Implementation of the EEC Directive on Legal Protection of Topographies of Semiconductor Products

	Belgium	Denmark	France	Germany	Greece	Ireland	Italy	Luxembourg	Netherlands	Portugal	Spain	U.K.
Date implementing legislation enacted	10 Jan 90	9 Dec 87	4 Nov 87	22 Oct 87	Note [1]	13 May 88	21 Feb 89	29 Dec 88	28 Oct 87	30 Jun 89	3 May 88	1 Aug 89[2]
Date implementating legislation in force	5 Feb 90	3 Mar 88	6 Nov 87	1 Nov 87		13 May 88	21 Feb 89	30 Dec 88	7 Nov 87	30 Jun 89	5 Sep 88	1 Aug 89
Employer owns employee works?	YES	YES	YES	YES		YES	YES	YES	YES	YES	YES[3]	YES
Commissioner owns commissioned works?	YES	YES	YES	YES		YES	YES	YES	NO	YES	YES	YES
Registration requirements?	NO	YES	YES[4]	YES		NO	YES	YES	YES	YES	YES	NO
Deposit requirements?	NO	NO	YES[4]	YES		NO	YES	YES	YES	YES	YES	NO
Fees payable on registration/deposit?	NO	YES	YES[4]	YES		NO	YES	YES	YES	YES	YES	NO
Provision as to use of topography notice?	NO	NO	YES[4]	NO		NO	YES	YES	NO	YES	YES	NO
Procedure for compulsory licencing	NO	YES	NO	NO		NO	NO	YES	NO	YES	YES	NO

NOTES

[1] No legislation or draft published
[2] Replaced 7 Nov 1987 Regulations
[3] Subject to Title 4, 1986 Patents Law
[4] Governed by 2 Nov 1989 Regulation

GENERAL NOTE The Council of the European Communities has issued two Decisions requiring all Member States to extend the benefit of topography rights to natural persons who are nationals of or habitually resident in various countries, and to companies or other legal persons with a real and effective establishment in those countries. Both extensions are effective until 7 November 1990.
Countries designated in the Council Decision of 26th October 1987: Anguilla, Bermuda, the British Indian Ocean Territory, the British Virgin Islands, the Cayman Islands, the Channel Islands, the Falkland Islands, South Georgia and the South Sandwich Islands, Hong Kong, the Isle of Man, Montserrat, Pitcairn, St. Helena and Dependencies, the Turks and Caicos Islands and the United States of America.
Countries designated in the Council Decision of 31st May 1988: Austria, Finland, French Polynesia, French Southern and Antartic Territories, Iceland, Japan, New Caledonia and Dependencies, Sweden, Switzerland, Collectivité territoriale de Mayotte, Collectivité territoriale de Saint-Pierre et Miquelon, and the Wallis and Futuna Islands.