Semiconductor Chip Protection in the Pacific Rim Countries

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US Semiconductor Chip Law

With its millions of intricately etched integrated circuits, the semiconductor chip represents a new kind of intellectual property which is of critical importance to any industrialized society. In 1984, the United States passed the *Semiconductor Chip Protection Act* (SCPA)[1] tailored to the unique needs of both the semiconductor industry and the public. The SCPA is a *sui generis* law which drew on the richness of both the patent and copyright laws of the United States. It has a narrowly-defined subject matter, a set of rights which differs from those provided by copyright, for example, no exclusive right to make derivative works; a broad exception for reverse engineering; and a ten year term of protection.

Since SCPA is a first of its kind of law in the world, it did not fall under any treaty or agreement providing international protection. In order to bring chip protection into the international arena, SCPA provided reciprocity provisions. Codified in Section 914 of the Act, SCPA authorized the Secretary of Commerce (who delegated the responsibilities to the Commissioner of Patents and Trademarks) to issue orders and to allow foreign nationals to obtain protection if certain statutory conditions were met. The most important of these conditions is demonstration by the foreign nation in question that it is making good faith efforts toward establishing a regime of protection substantially similar to that provided under the SCPA. Section 914 was intended to be a transitional provision, and would have expired in 1987 but for two extensions. It is currently scheduled to expire on 1 July 1995.

This carrot and stick approach—we protect your country's work so long as you make speedy progress towards laws protecting ours—has been effective. Using Section 914, during the short seven and one half year life, the United States has, to some small degree, managed to internationalise chip protection by developing bilateral relations with over 20 foreign countries. These countries are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Luxemborg, the Netherlands, Portugal, South Korea, Spain, Sweden, Switzerland and the United Kingdom. A vast majority of these countries enacted laws similar to the SCPA. Hong Kong and Taiwan in the Pacific Rim are at present in the process of enacting of laws for protection of chips.

The other reciprocity provision in the SCPA, Section 902(a)(2), permits the US President to grant reciprocity to foreign nationals by presidential proclamation. A proclamation can issue with respect to a foreign country only on a finding that the '...foreign nation extends to mask works of owners...of the United States protection (A) on substantially the same basis as that on which the foreign nation extends protection to mask works of its own nationals..., or (B) on substantially the same basis as provided in [the SCPA]...'[2]

There has not been a single presidential proclamation under Section 902(a)(2).

Multilateral Treaties on Chip Protection

Significantly, two important international organizations have devoted time and energy to the development of minimal standards of chip protection. First, the World Intellectual Property Organization (WIPO) sponsored the conclusion of a multilateral treaty. A diplomatic conference was held in May 1989 in Washington DC, with participation from industrialized, developing and the then Communist countries. The treaty was adopted by 49 votes in favor, 2 against and 5 abstentions. The treaty did not fulfil the expectations of United States and Japan, the world's major producers and consumers of semiconductor chips, and they voted against the treaty. Second, in the context of the Uruguay round of the General Agreement of Tariffs and Trade, treaty negotiators on intellectual property issues (TRIPS) have pressed for minimal standards higher than those achieved by WIPO. Of course, TRIPS will be a reality only if a new GATT is agreed to, and the jury is still out on the ultimate fate of the Uruguay round.

Another noteworthy development in the international arena is the issuance by the European Community (EC) of a directive on mask works protection titled Council Directive of 16 December 1986 on the Legal Protection of Topographies of Semi-

conductor Chip Producers. This directive to the EC member states establishes the minimum chip-protection standards that must be satisfied by the member states. Article 2(2) allows a member state to provide mask work protection through its national copyright law or *sui generis* legislation. Article 5(3) requires a member state to provide an exception allowing for the unauthorized copying of a mask work for reverse engineering analogous to the reverse engineering provision contained in the SCPA.

Chip Protection in the Pacific Rim

A. Japan

Japan, ranked second to the United States in terms of production of semiconductor chip products in the world, was quick to follow the US legislative initiative. The Japanese counterpart to the SCPA, known as the 'Act Concerning the Circuit Layout of a Semiconductor Integrated Circuit' was enacted on 31 May 1985, and took effect on 1 January 1986. The contents of the Japanese Act are substantially similar to the SCPA with four major differences:

1. Protection is extended to all persons, irrespective of the nationality, unlike the SCPA which is based on the principle of reciprocity;

2. Protection begins on the date of registration under the provisions of the Japanese Act rather than on the date of first commercial exploitation as compared to the SCPA under which protection starts on whichever is the earlier of the two dates;

3. Mask work infringement may result in criminal punishment, whereas SCPA provides for civil penalties only; and

4. No mask work notice requirements or provisions are specified in the Japanese Act, unlike the SCPA which contains specific, albeit optional, mask work notice provisions, eg, the letter 'M' in a circle, the name of the owner and the date of first publication.

B. Australia

Primarily as a result of pressure by the US following the passage of the SCPA, Australia passed its *Circuit Layouts Act* 1989 which became effective on 2 October 1990. It is based on the WIPO treaty and provides copyright style protection for integrated circuit designs. The Act is intended to provide protection similar to that provided by the SCPA. However differences exist. Key differences between the Australian legislation and the SCPA are:

"It is based on the WIPO treaty and provides copyright style protection for integrated circuit designs"

1. The Australian Act contains a definition of 'integrated circuit' that appears to be somewhat broader than the definition of 'semiconductor chip product' in the SCPA. The definition of 'integrated circuit' in the Australian Act reads as:

> 'A circuit whether in a final form or an intermediate form, the purpose, or one of the purposes, of which is to perform an electronic function, being a circuit in which the active and passive elements, and any of the interconnections, are integrally formed on a piece of the material.'

SCPA defines a 'semiconductor chip product' as:

> 'the final intermediate form of any product -
>
> '(A) having two or more layers of metallic, insulating, or semiconductor material, deposited or otherwise placed on, or etched away or otherwise removed from, a piece of semiconductor material in accordance with a predetermined pattern; and
>
> '(B) intended to perform electronic circuit functions;'

Thus, in order for a mask work to be protectible under the SCPA, it must be fixed in a semiconductor material. Although the US Copyright Office recently clarified that semiconductor materials include silicon, germanium and gallium arsenide, the Australian Act appears to protect integrated circuits formed on any material.

2. The Australian Act requires an originality standard for chip layout protection which is linked to creative contribution. It recites that a circuit layout is not original if: '(a) its making involved no creative contribution by the maker; or (b) it was commonplace at the time it was made.' The SCPA has a novelty standard higher than the originality standard of US copyright law, but no creative contribution is required. Protection is not available for a mask work that 'consists of designs that are staple, commonplace or familiar in the semiconductor industry or variations of

such designs, combined in a way that considered as a whole, is not original.'[3]

3. There is no registration requirement under the Australian Act. Circuit layouts are protected for 10 years from the date of first commercial exploitation or 10 years from the date the layout is made if it is not commercially exploited within that time. Compare this with SCPA which states that 'Protection of a mask work...shall terminate if application for registration in the mask work is not made ...within two years after the date on which the mask work is first commercially exploited anywhere in the world.'[4]

4. The Australian Act provides a broad innocent infringement provision under which an innocent infringer may continue to exploit the stock of pirated chips acquired prior to receiving notice that they are illegal copies, if the owner of the circuit layout rights in the chips cannot demonstrate that the infringer did not know or could not reasonably be expected to have known that the chips were illegal copies. In stark contrast, the SCPA requires payment of a reasonable royalty by the innocent infringer on each unit of the infringing semiconductor chip product (i.e., stock on hand) after having notice of protection.

C. *Hong Kong*

Hong Kong recognized the need for special legislation for protection of integrated circuit layouts as early as June 1988. After the conclusion of the WIPO treaty, which Hong Kong supported, Hong Kong initiated formulation of a legislative proposal to mirror its international obligations under the treaty. However, due to the various shortcomings in the WIPO treaty and the profound criticism that this treaty received from the United States, Hong Kong temporarily withheld formulation of its chip legislation pending the outcome from the negotiation for TRIPs agreement, which sought to make good the shortcoming in the WIPO treaty. Once the draft SCPA agreement has taken shape, Hong Kong wasted no time in reactivating its legislative drafting efforts. In early February 1993, having reached an advanced stage of drafting by completing the major draft provisions and the explanatory notes of the legislative proposal, the Secretary for Trade and Industry invited early comments and advice on the draft from concerned organizations. The Secretary embarked on an ambitious course to finalise the proposed legislation and introduce it to the current Session of the Hong Kong Legislative Council.

"There is no registration requirement under the Australian Act"

In the true spirit of membership in the British Commonwealth, the draft provisions are based on the chip legislations in the United Kingdom and Australia. The draft also attempts to conform with the international standards set forth in the WIPO treaty and the draft TRIPs agreement. The Hong Kong draft is titled 'The Layout-Design (Topography) of Integrated Circuits Ordinance'. It contains 18 clauses dealing with specific subject matter as below:

Clause 1 is the title of the legislation.

Clause 2 contains the key definitions.

Clause 3 defines the scope of protection.

Clause 4 spells out the owner's rights under the legislation.

Clause 5 contains the fair use provisions including the reverse engineering and parallel importations provisions.

Clause 6 defines the term of protection.

Clauses 7-9 deal with the infringement remedies.

Clause 10 spells out the defences available for an accused infringer.

Clauses 11 and 12 are the statutory presumption of ownership and affidavit evidence provisions.

Clause 13 deals with remedies available to the aggrieved by groundless threats of infringement.

Clauses 14-17 spell out transfer of rights including assignments and licences and exercise of concurrent rights by a right owner and licensee in litigation situations.

Clause 18 is the provision under which the Governor of Hong Kong designates countries that would qualify for protection under the Ordinance.

The draft contains a number of good provisions. Considering this is the first draft, the drafters of this legislation are to be congratulated for including these provisions. Among the more important ones are:

Sui Generis Legislation

The proposed legislation is *sui generis*. This is consistent with the international trend initiated by the United States via its SCPA. Although the *sui generis* approach suffers from

the lack of historic body of principles upon which to rely in order to resolve disputes involving chip protection, the case law in this area is beginning to build, albeit slowly. Hong Hong, like other countries which passed similar legislation, would be able to benefit from this

Broad Subject Matter

The definition of 'integrated circuit' is broad enough to include circuits formed on/in any material, unlike the US SCPA which limits the protection to chips formed in semiconductor material. Recently, the US Copyright Office had to clarify that semiconductor materials include silicon, germanium and gallium arsenide. By not specifying the nature of the material (semiconductor or other) in which the integrated circuit is embodied, the proposed legislation is made open-ended to embrace all known and yet undiscovered materials in which the integrated circuit is incorporated.

Originality

The draft legislation contains a high originality standard akin to that in the US chip law. To qualify for protection, a layout design must be original and is the result of its creator's own intellectual effort and is not commonplace among creators of layout-designs and manufacturers of integrated circuits. By defining 'originality' in this manner, the difficult-to-prove 'creative contribution' hurdle that is characteristic of the Australian *Circuits Layout Act*, for example, is not encountered in Hong Kong. [7]

Downstream Product Infringement

The Ordinance allows the right holder to sue anyone who imports, sells or otherwise distributes not only the protected layout-design, an integrated circuit incorporating the layout design, but also the end product—a TV set, VCR, automobile—employing a semiconductor chip which incorporates a protected layout-design. This downstream product provision was the most hotly debated issue during the TRIPs negotiation under the Uruguay Round of GATT. In this regard, the Hong Kong Ordinance rises up to the requirement of the draft TRIPs agreement.

However, the proposed legislation has some features, summarized below, which may cause concern to ardent proponents of a strong and effective chip legislation in Hong Kong:

> ***"The definition of 'integrated circuit' is broad enough to include circuits formed on/in any material unlike the US SCPA..."***

Compulsory Licensing

The Ordinance states that draft provisions on Governmental use of the protected layout-designs are still under preparation. However, the Explanatory Note accompanying the above Ordinance indicates grant of broad compulsory licence for Governmental or third party use of the protected layout-designs under ambiguous and broadly worded circumstances ('i.e., where it appears necessary or expedient for the maintenance, or securing sufficiency of supplies and services essential to the life of the community'). This compulsory licence is the antithesis of the free market which Hong Kong espouses. It fails to provide guarantees that layout-design owner can contest a request for compulsory licence. This ambiguity heightens the fear that the compulsory licence provision may be used as a tool for discriminating against foreign rights owners.

A compulsory licence for layout-designs is inappropriate since the term of protection is much shorter than other intellectual properties and reverse engineering is available. Because of the short term of protection, compulsory licence is unnecessary even 'in limited circumstances of extreme urgency'.

Moreover, a compulsory licence must include all detailed language protecting against abusive application of the licensing authority.

Infringement Remedies

The draft legislation provides for civil remedies only when a protected layout-design is infringed. Although the High Court has the discretion to grant additional damages in flagrant infringement situations, money damages alone would not be effective deterrent against infringement in Hong Kong. Relative to remedies, Hong Kong should model its layout-design protection law after its counterparts in Japan, Korea and Taiwan (now in draft) which all provide for criminal remedies. Alternatively, Hong Kong should include in the present legislation remedies similar to those contained in Hong Kong's *Copyright Ordinance* (CAP 39). Accordingly, possession of infringing copies of layout-designs for purposes of trade or business and of possession of equipment for producing infringing chips should be a

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criminal offence. Like in the *Copyright Ordinance*, anyone convicted of possessing infringing copies of layout-designs should be held liable to a fine of HK$1000 for each infringing copy and to imprisonment for one year. Also, the present Ordinance should specify a maximum penalty for possession of equipment for making infringing copies.

Criminal sanctions have been an effective deterrent in Hong Kong against illegal copying and distribution of copyrighted works. Based on this proven record, such sanctions should be included relative to infringement of rights in chip designs.

Coverage of Discrete Semiconductor Devices

It is not clear whether the definition of an 'integrated circuit' in Article 2(1) extends to discrete semiconductor devices. Discrete devices should clearly be included within the scope of the chip protection law. Coverage of discrete devices may be required if the Hong Kong law is to be judged 'substantially similar' to the US SCPA Section 914. Clarification should be made whether the definition of 'integrated circuit' includes coverage of discrete devices that otherwise meet the prerequisites of originality.

In conclusion, the draft attempts a dramatic leap forward in meeting its legislative intent of (1) attracting foreign investment, encouraging research and development and transfer of semiconductor chip technology in Hong Kong; (2) discharging Hong Kong's prospective obligations under GATT TRIPS; and (3) enabling protection of Hong Kong's chip designs, on the basis of reciprocity, in the United States by virtue of Section 914 of the SCPA.

D. The Peoples Republic of China

The PRC is contemplating a new legislation for protection of mask works in that country. It is expected that PRC would have a draft law circulating in 1994. At present, this country is 5 to 10 years behind the United States and Japan in semiconductor chip development and manufacturing technology. But its economy is growing faster than any other large country. There are indications that China intends to purchase up to $2 billion worth of equipment to produce semiconductor chips over the next two or three years [5] With this

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projected enormous investment in chip making, and its eyes set on exporting the chips to the US it is expected to pass adequate chip protection legislation well before the chips roll out of its manufacturing lines.

E. South Korea

South Korea, which has closely imitated Japan in semiconductor development and manufacturing and indeed achieved the greatest 'critical mass' to the extent of becoming the world's leading chip manufacturer, has been slow in embracing chip protection legislation that would be acceptable to the international community. More than two years after its signing the WIPO's Washington multilateral treaty, South Korea made public a draft law to protect semiconductor chip designs. This draft was prepared by the Ministry of Trade and Industry (MTI). It was first made available for public comment in June 1991 and known as the 'Draft Act for the Layout Design of Semiconductor Integrated Circuit' (hereafter, the Korean draft). It is based on the Washington treaty and borrowed some features from Japan's Act. This draft evoked profound criticism from the international community, particularly the US Semiconductor Industry Association (SIA) for several of its shortcomings and ambiguities. SIA claimed that the Korean draft would not meet the 'substantially similar' standard necessary for reciprocity under Section 914 of the SCPA. Specifically, three provisions of the Korean draft were singled out by the SIA. These are:

(1) the compulsory licensing provision which authorizes licensing of mask works under ambiguous and broadly worded circumstances (such as for 'important national purpose' without defining what constitutes 'important national purpose');

(2) immunity given to good faith users of infringing chips even after notice of infringement; and

(3) exemption for importation and distribution of higher level (downstream products) such as computers and TVs incorporating infringing chips.

The MTI submitted the Korean draft to the Korean National Assembly in 1991, but it failed to obtain the Assembly's consent principally for two reasons. The Assembly wished to take a wait-and-see approach until the TRIPS agreement in the GATT is finalised and concluded. Second, there was strong opposition from the Korean chip manufacturers

against early enactment of the chip law in Korea.

Cognizant of SIA's criticism and progress that has been made in the GATT TRIPs agreement, the MTI redrafted the bill in 1992 in line with the provisions adopted in the TRIPs agreement when it comes into existence. This new draft was submitted for passage to the legislative session of the National Assembly in 1992. It sailed through the National Assembly and on December 8, 1992 it was signed into law by the Korean President to become effective some time before December 8, 1993. The new law (hereafter, the Korean Act), retains a number of key provisions of the 1991 draft since the MTI finds them desirable. The major differences between the Korean Act and the SCPA are discussed below.

Scope of Protection

The Korean Act rather than protecting the mask work, appears to protect the layout design. Article 2(2) of the Korean Act states that

> 'Layout design means a plane or cubic design of the circuit elements and wires which connect the elements, which could be used in manufacturing a semiconductor integrated circuit'.

Under the Korean Act, the design does not have to be 'fixed' or stored in mask form as it does in the SCPA to obtain protection. However, the definition of 'semiconductor integrated circuit' in the Korean Act clarifies that it stands for a manufactured product indicating that the intent of the Act is to protect the manufactured semiconductor integrated circuit based on the layout design.

Rights Granted

The Korean Act grants layout design rights quite akin to those in the SCPA. Under the SCPA, Section 905, the owner of a mask work has the exclusive right to do and authorize:

the reproduction of the mask work;

the importation or distribution of a semiconductor chip product embodying the mask work; and

to induce or knowingly cause another person to do any of the aforementioned acts.

The Korean Act, Articles 8, 10(1), 11(1), 12(1) and 16, gives the owner

"The Korean Act rather than protecting the mask work, appears to protect the layout design"

of a registered layout design the exclusive right to use his work for business purposes, to transfer the layout design right, to grant either an exclusive or nonexclusive licence to use the layout design and to guarantee that once a pledge is consummated, the layout design will be used in accordance with the terms of the pledge. Article 2(4)(c) of the Korean Act defines 'use' as the reproduction of a layout design; manufacture of a semiconductor integrated circuit based on a layout design; or the transfer, lease, display (only if it is for transfer or lease purposes) or importation of a layout design of a semiconductor integrated circuit that has been manufactured based on a layout design or products containing such semiconductor integrated circuits.

Eligibility for Protection

Although both the SCPA and the Korean Act grant owners of protected works similar rights, the eligibility for those rights and the protection which is afforded under the acts are slightly different.

Under Section 902(a)(1) of the SCPA, a mask work is eligible for protection from the date of registration in the US or from the date of first commercial exploitation anywhere in the world. This protection is accorded to any owner regardless of whether he or she is a national or domiciliary of the US or of a state which has reciprocal provisions or is stateless. Moreover, under Section 914 of SCPA, protection is extended to nationals of foreign countries which are deemed to be making a good faith effort and reasonable progress toward enacting legislation which protects mask works. Protection under the SCPA terminates if the owner of the mask work does not register the work with the Registrar of Copyrights within two years of first commercial exploitation of the work anywhere in the world.

Under Article 6 of the Korean Act, the layout design rights come into being only upon registration of the design. Per Article 19, application for registration of the layout design must be filed with the MTI within two years from the date of initial commercial use. Article 3 provides for protection of works of foreigners (individuals and corporations). However, under Article 4(1) if a foreigner does not have a domicile or place of business in South Korea, the owner is required to be represented by a local agent (defined in

the Act as a 'Layout Design Administrator') in any administrative or court proceedings relating to a layout design.

Article 3(2) of the Korean Act provides that notwithstanding any other provision, the MTI can limit the protection of layout design of foreigners whose country does not endow reciprocal rights to Koreans. Thus, under the language of this provision, while Korea does not automatically exempt from protection a foreigner whose country does not accord Koreans reciprocal protection, South Korea has the option of limiting such protection. The Korean Act does not have the SCPA's international transitional provision.

Finally, under Article 7 of the Korean Act, the term of protection for the layout design is 10 years from the date of registration, but it is not to exceed ten years from the date of initial commercial use or fifteen years from creation.

Limitation of Rights

The Korean Act contains provisions directed to downstream products, reverse engineering and innocent infringement. While there are no significant differences in the downstream product provisions, Section 901(b) of the SCPA and Article 2(4)(c) of the Korean Act, or the reverse engineering provisions, Section 906(a) of the SCPA and Article 9(1) of the Korean Act, there is a significant difference in the innocent infringement provisions, Section 907(a)(1) of the SCPA and Article 38(1) of the Korean Act.

Under the SCPA, the owner of the mask work can demand a reasonable royalty for each unit of the infringing semiconductor chip product that the innocent infringer imports or distributes after having notice of protection with respect to mask work embodied in the product. In contrast, under the Korean Act, the layout design owner's (or the exclusive licensee's) claim for a royalty from an innocent infringer is limited to the amount of profit which the innocent infringer earned from the use of the infringing chip (Article 38(2)). Thus, while the MTI has bowed to SIA's demands for inclusion of a provision in the Korean law to enable the infringed party to directly seek damages from the innocent infringer, it has restricted the quantum of damages that the infringed party may seek from this infringer to the infringer's profit.

"it appears that under the Korean Act only compensatory damages are available"

Damage Compensation

While the remedies available to the infringed mask work owner to prevent or restrain the infringement of rights are similar under the SCPA and the Korean Act, there are key differences between the two Acts in the damages available to the infringed party.

Under Section 911(b) of SCPA, the infringed party could be awarded the actual damages suffered as a result of the infringement. Additionally, the infringed party could be awarded the infringer's profits that are attributable to the infringement. Alternatively, the infringed party can seek statutory damages instead of actual damages for all infringements involved in the action in an amount not more than $250,000 which the court considers just (Section 911(c) of SCPA).

The Korean Act in Article 36(1) provides for recovery of actual damages akin to the SCPA. However, unlike SCPA, it imposes a limit on the amount of damages that may be claimed. Under Article 36(2), the infringer's profits, if any, as a result of the infringement are presumed to be the amount of loss suffered by the infringed party. Alternatively, the infringed party may seek damages equivalent to the ordinary royalty which would have been paid for use of the infringed layout design (Article 36(3)). However, under Article 36(4), if actual damages exceed the ordinary royalty, the holder of the layout design right may claim damages in excess of the ordinary royalty. If the holder of right chooses this course of action, however, the court has the discretion to decrease the damage award if the infringement was not intentional or due to gross negligence. Notwithstanding Article 36(4), in the case of a downstream product, the damage compensation awarded may not exceed the profit directly derived from the use of the infringed chips (Article 36 (5)).

Thus, it appears that under the Korean Act only compensatory damages are available. Although the damages provisions are weak compared to those in the SCPA, the Korean Act, unlike the SCPA, has a penal provision. Article 45 provides that an infringer shall be fined up to 10 million Korean Won or be imprisoned up to three years if the infringed party files a criminal complaint against the infringer and prevails in this criminal action.

Compulsory Licensing

Despite the criticism from SIA and protestations from other sectors in

the US, the compulsory licensing provision is still unchanged from the 1991 draft. Article 13 of the Korean Act provides that if a layout design has not been in use in substantial commercial scale or the demand for the layout design cannot be properly met by suppliers, a person ('Applicant') may demand negotiations with the owner of the protected right to obtain a licence. If they are unable to come to terms, the Applicant can ask MTI to arbitrate. The MTI will award a compulsory licence, which clearly sets out in writing the extent of the licence, the licence fee and the means of payment, and the term of licence, if the MTI believes that the awarding of the compulsory licence is necessary for national security or necessary to establish a competitive market or necessary to prevent an abuse of the rights of the registered layout design holder or exclusive use holder. SCPA does not have a compulsory licence provision.

Deregistration

Unlike the SCPA, the Korean Act, Article 24, provides for the cancellation of the registration of a layout design right. The items which have drawn particular criticism are items 2, 4 and 5 of Article 24 since they seem to be unfair to the owner of the layout design right and give too much discretion to the Minister of Trade and Industry.

Article 24(2) provides that the MTI may revoke the registration of a layout design right if the design has not been used in South Korea for more than two consecutive years from the date of the award of a compulsory licence. This treatment does not appear to be fair or equitable to the owner of the layout design right who is having registration revoked because of the inaction of the licensee who was awarded a compulsory licence to use the layout design.

Article 24(4) provides that the Minister of Trade and Industry may revoke the registration of a layout design right if he or she decides that the design lacks creativity. Because of the lack of a substantial review process at the time of registration, it appears that the owner of the layout design right is having registration cancelled without due process. (The SCPA provides for a review process if an applicant is refused registration of his or her mask work. Under Section 908(g), if an applicant's request for registration is refused, the rejected applicant may seek judicial review of that refusal by bringing an action for review in the appropriate US district court. Also, under the SCPA, a failure to issue a registration certificate within four weeks after the application has been filed is also construed as a refusal for the purpose of seeking a judicial review).

"...this legislation has been a regular topic on the United States and Taiwan trade negotiations agenda"

Article 24(5) provides that the registration may be revoked by the MTI if the registration violates any provision of the Korean Act or any order issued 16 thereunder. This language appears to be too broad and sweeping. It is unclear what violations will lead to cancellation of the registration.

Review and Mediation Committee

The Korean Act, Article 25, establishes a 'Layout Design Deliberation Committee' whose 10-15 members are appointed by the MTI to deliberate matters concerning layout design rights and to mediate disputes concerning the rights and interests protected by the Korean Act. Contrast this with SCPA, Section 908(a) where the Registrar of Copyrights is responsible for all administrative functions and duties.

Thus, the Korean Act is similar in many respects to the SCPA. This similarity may be because the US semiconductor industry through SIA and others provided comments on the previous draft(s) of the Korean Act. The provisions which have a possibility of a major point of disagreement between the US and South Korea are compulsory licensing and revocation.

F. The Republic of China

The Republic of China has been working on a draft chip legislation since the late 1980s and still does not have the law enacted. The lack of substantial progress in this enactment can be attributed to the copycatting and low cost assembly-type business upon which Taiwan has been thriving. Recently, there have been indications that Taiwan will join the big league in semiconductor technology by substantially investing in development of the next generation semiconductor technology.[6] Whatever progress Taiwan has made until now in chip legislation can be attributed to the fact that this legislation has been a regular topic on the United States and Taiwan trade negotiations agenda.

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The National Bureau of Standards (NBS), agency in charge of the administration of patents and trademarks, is entrusted with the drafting of the Taiwanese chip law known as the *Integrated Circuit Layout Protection Act* (hereafter, ICLPA). NBS has submitted the draft ICLPA to the Ministry of Economic Affairs (MOEA) in late 1991 where it has bogged down, undergoing review and amendment. Under the June 1992 memorandum of understanding reached between the United States and Taiwan trade representatives, Taiwan has committed to work with its legislative Yuan for passage of the ICLPA by July 1994.

The ICLPA is an amalgam of the chip laws of the United States, Japan, Germany and the WIPO's Washington treaty. It has been drafted to meet the minimum requirements set forth in the GATT TRIPs agreement relating to semiconductor chip protection. However, in its present version, it does not meet all of these minimum standards. While the ICLPA is in many respects similar to the SCPA, there exist notable differences as discussed below:

Scope of Protection

Unlike the SCPA which has explicit fixation requirement for mask work to be eligible for protection, the ICLPA, Article 2(2) offers protection to a circuit layout which is defined as 'a three dimensional spatial arrangement of the electronic components and the interconnections between such components used in a semiconductor integrated circuit'. Fixation is not explicitly recited in the definition of circuit layout. However, the definition of 'integrated circuit' Article 2(1) as 'a finished or semi-finished product having electronic circuitry functions, in which transistors, capacitors, resistors or other electronic components and the interconnection between them are integrated in a semiconductor material' implies that the scope of protection is directed to a circuit layout product formed in a semiconductor material.

Registration Requirement

Like the SCPA, the Taiwanese ICLPA requires registration as a prerequisite for protection of the circuit layout. Also like the SCPA, registration is denied if an application for registration is not filed within two years from the date of first commercial use. However, in the case of works that have not been commercially exploited, the ICLPA allows up to fifteen years from the creation of the circuit layout to apply for registration.[7] The term of protection is the same as that in the SCPA.[8]

"Fixation is not explicitly recited in the definition of circuit layout"

Administrative Body

The counterpart to SCPA's Registrar of Copyrights in Taiwan's ICLPA is the Patent and Trademark Office under the supervision of MOEA. Per Article 3, all affairs concerning circuit layout registration are administered and handled by the Patent and Trademark Office. This article also states that anyone who is dissatisfied with the decisions rendered by this administrative agency may institute an administrative appeal and file suit with the administrative court in accordance with the laws of ROC.

Examination Standard

Under Article 18 of the ICLPA, in order for a circuit layout to be entitled for protection it is required to meet the following two substantive requirements: creativity and nonobviousness. Presumably, the Patent and Trademark Office examines circuit layout application for registration to satisfy this dual requirement before it issues a certificate of registration. Contrast this with Section 908(e) of the SCPA under which the Copyright Office does not examine the application to satisfy the originality requirements spelled out under the Act. The application is examined only on the basis of the deposit materials and the facts set forth in the application. If the application, identifying materials and any other information supplied by the applicant support the conclusion that the mask work claim is facially in compliance with the SCPA and the regulations, a certificate of registration is issued.

Rights Granted

The rights granted under the ICLPA are somewhat narrower than those under the SCPA.

Article 19 of the ICLPA reads:

> 'The owner of the right to use a circuit layout shall be entitled to the following rights:
>
> (1) to reproduce his circuit layout, in part or in whole, by optical, electronic or other methods; and
>
> (2) to import or disseminate the circuit layout or the integrated circuit including the circuit layout for commercial purposes.'

Compare this with SCPA's Section 905 which reads:

> 'The owner of a mask work...has the exclusive rights to do and authorize any of the following:
>
> (1) to reproduce the mask work by optical, electronic, or any other means;

(2) to import or distribute a semiconductor chip product in which the mask work is embodied; and

(3) to induce or knowingly to cause another person to do any of the acts described in paragraphs (1) and (2) above.'

The ICLPA is silent with regard to the contributory infringement provision recited in Section 905(3) of the SCPA. However, in all contributory infringement cases including those involving circuit layouts, the following Articles 29 and 30 of the ROC Criminal Code apply:

Article 29:

I. A person who incites another to commit an offence is an instigator.

II. An instigator shall be punished according to the punishment prescribed for the incited offence.

III. If punishment has been prescribed for an attempt to commit the incited offence, the instigator shall be considered guilty of an attempt notwithstanding that the person incited has committed the offence.

Article 30:

I. A person who assists another in the commission of a crime is an abettor notwithstanding that the person assisted does not know of such assistance.

II. The punishment prescribed for the the abettor may be reduced from that prescribed for the principal offender.

Limitations of Rights

Unlike SCPA's downstream product provision, Section 901(b), there is no such protection for circuit layout owner against importation or distribution of higher level products incorporating the circuit layout in the Taiwanese draft. At public hearings held by NBS on ICLPA, this issue was raised by representatives of the US semiconductor industry. However, most of the Taiwanese semiconductor chip manufacturers raised their objections to inclusion in ICLPA of a provision like the Section 901(b) of the SCPA claiming that it unduly broadens the scope of the law. NBS has not yet decided whether such a provision should be included in the Taiwanese Act. Without the inclusion of the downstream product provision like SCPA's Section 901(b), ICLPA fails to rise to the minimum standards of the GATT TRIPS agreement.

"...the affixation of such notice is not a condition for protection, it constitutes prima facie evidence of notice that the work is protected"

Notice and Marking Requirement.

Section 909 of the SCPA requires that the owner of a mask work affix a notice in prescribed form to the mask work, masks and semiconductor chip product embodying the mask work in such manner and location as to give reasonable notice of such protection. Although the affixation of such notice is not a condition for protection, it constitutes prima facie evidence of notice that the work is protected. Taiwan's ICLPA is silent on the notice and marking provisions.

Infringement Remedies and Civil Damages

Articles 27-30 and 32-33 of the ICLPA deal with the issues of available remedies and damages in case of infringement of rights in a circuit layout. In case of infringement, the owner of the rights in the circuit layout or its exclusive licensee may take the following actions:

(a) Institute a civil action seeking permanent injunction against further infringement and monetary compensation as damage (Articles 27 and 28). The damages that the injured party may seek is the infringer's profit as a result of the infringement or statutory damages in the amount ranging from 50,000 to 100,000 times the actual unit selling price of the integrated circuit using the infringed circuit layout. When relying on statutory damages, however, the maximum amount that can be claimed is limited to NT$5 million (or about US$200,000). This is comparable to SCPA's limit of US$250,000.

(b) Institute a criminal action against the infringer (Article 32). The criminal penalties stipulated are imprisonment for up to three years and/or fine not exceeding NT$150,000.

(c) Seek from innocent infringer a royalty payment which is customary for licensed use of the circuit layout if the infringer has notice of such infringement and continues to import or distribute the infringing layout (Article 29).

(d) Publish in local newspapers, at the infringer's expense, the

court's affirmation of the infringement (Article 30).

Grace Period

ICLPA provides a six month grace period for registration of circuit layouts which have been under commercial exploitation for a period of less than two years prior to the promulgation of ICLPA (Article 34).

The Taiwanese draft also allows continued infringement of circuit layouts which were reproduced before the promulgation of ICLPA. However, once the Act comes into being, the owner of the rights in the layouts can collect reasonable royalties for such use by the infringer and legitimize the use by granting a licence.

In conclusion, the Taiwanese draft chip law is still in a state of flux. It is expected to undergo notable changes as it emerges from the review process by NBS and MOEA. It is bound to meet the minimum requirement set forth in the GATT TRIPS agreement. To this end, downstream products incorporating an infringing circuit layout are expected to be included in ICLPA as infringing goods. It is also expected that there would be further opening up of NBS's drafting and legislative process to the public and semiconductor industry for comment, since these comments are extremely beneficial in enacting a law that would be acceptable to all segments of national as well as international community.

Conclusion

The progress that Pacific Rim Countries have made in enacting national laws for the protection of semiconductor chip designs has been remarkable. This progress has picked up momentum particularly in the last couple of years. Although problems remain with chip legislations in some countries (eg the compulsory licensing provision in the Korean law and the Hong Kong draft), by far all of these countries in the Pacific Rim appear to have come a long way in fulfilling their actual obligations under the WIPO treaty and prospective obligations under GATT TRIPS. It is anticipated that the remaining industrialized countries in the Pacific Rim would soon join ranks with the present group by passing acceptable semiconductor chip legislation in their countries.

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Footnotes

[1] Public Law 98-620; Chapter 9, Title 17 United States Code.

[2] Section 902(a)(2)

[3] 17 United States Code 902(b)(2).

[4] 17 United States Code 908(a).

[5] 'China Seeks Chips Made in USA', International Herald Tribune, 19 November 1992.

[6] 'Asia's High Tech Quest', Business Week, 30 November 1992. 'Taiwan Debates Chip Research Project', Asian Wall Street Journal, 4 December 1991.

[7] Article 10(2)

[8] Article 9