

Green Intellectual Property Scheme: A Blueprint for the Eco-/Socio-Friendly Patent Framework

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To approach the implementation of the Green Intellectual Property (GIP) scheme outlined in earlier work, this article envisions a concrete image for the institutional and procedural construction of the entire system. The GIP system is designed to impose a levy on patent applicants/owners in three forms: GIP Reserve, GIP Premium and GIP Tax, which would establish a GIP Trust Fund to facilitate the unimpeded prevalence of eco/socio-friendly technologies. From this Fund, the system would disburse GIP Financial Assistance in two forms: GIP Insurance and GIP Aid, which would make it possible for users lacking capital to access necessary technologies. Since this financial assistance would ultimately pass to patentees, the system would convince patent applicants/owners to bear the cost for the GIP Trust Fund. The GIP system would be operated by the International Bank for Intellectual Property (IBIP), a financing institution proposed to be an affiliated entity of the World Intellectual Property Organization (WIPO). Previous estimations have concluded that the Fund could reach several tens of billions of US dollars annually, which would substantially accelerate the distribution of various eco/socio-friendly technologies, typically including renewable energy technologies such as solar power generation and essential medicines such as AIDS/HIV drugs.

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INTRODUCTION

Among a number of examinations on the function of the intellectual property system, or more specifically the patent system, one of the most profound explanations is the relationship between the patent system and public funding, proposed by Nuno Pires de Carvalho (Carvalho, 2005). In contrast to two of the most widely accepted views of the patent system, the reward doctrine (see *e.g.*, Miller & Davis, 2000) and the prospect theory (see *e.g.*, Kitch, 1977), Carvalho focuses on the similarity between the patent system and public funding in that both mechanisms render to an inventor the privilege to promote a technology. In addition, Carvalho emphasizes the superiority of the patent system over public funding in accurately determining or "metering" the value of technology to be funded.

One of the recent ideas consistent with the funding feature of the patent system is the "Green Intellectual Property (GIP)" System, which has recently been proposed as a reformed intellectual property system (Nitta, 2005a-c, 2006 and others at www.greenip.org). This system is designed to financially assist technology users who have unfavorable or no access to a patent-protected technology. Previous studies of the GIP System indicate that the system has strong financial feasibility to facilitate the effective distribution of various eco/socio-friendly technologies, typically including renewable energy technologies such as solar power generation (Nitta, 2006) and essential medicines such as AIDS/HIV drugs (Nitta, 2005c).

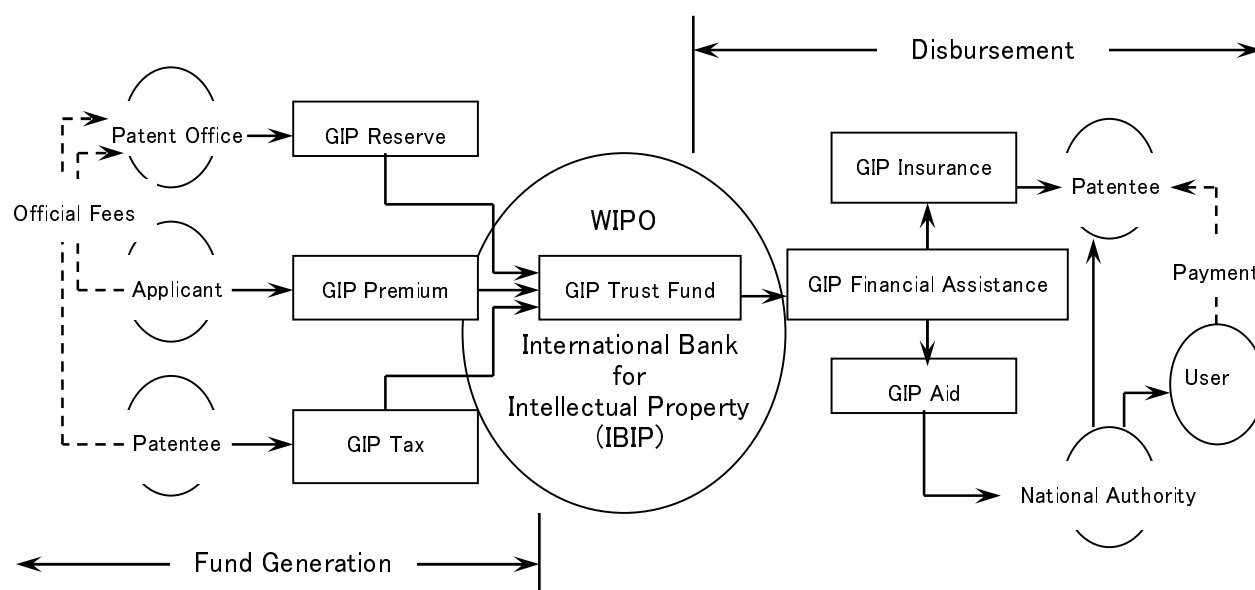


Figure 1. Monetary flow throughout the Green Intellectual Property scheme.

After publishing the idea of the GIP System, many inquiries have been emerging especially regarding the actual and practical operation of the System. In respond to these inquiries, this article is intended to provide an institutional and procedural image of the GIP System. It first reviews the GIP System and subsequently outlines a blueprint of the System in depth.

GREEN INTELLECTUAL PROPERTY (GIP) SCHEME

The Green Intellectual Property (GIP) System would divert a part of patent-related monetary flow toward a fund to facilitate the unimpeded distribution of eco/socio-friendly technologies, or green technologies (Nitta, 2005a-c, 2006). Green technologies are products, methods and/or services that reduce human impact on the environment and society. As illustrated in Figure 1, the GIP System would impose a levy on patent applicants and owners in the form of the GIP Reserve, GIP Premium and GIP Tax (see Table 1), which would establish the GIP Trust Fund. From this Fund, the GIP System would provide GIP Financial Assistance to technology users who seek green technology, typically including ecological apparatuses and essential medicines if those users were unable to access such technology due to capital shortage. Financial Assistance would be provided in two forms: GIP Insurance and GIP Aid (see Table 2).

Each element of the revenue and expenditure of the GIP System is defined below.

- The GIP Reserve is a special budget allocated from the revenues of the patent office that patent applicants and owners pay as official fees during the prosecution of an application and the maintenance of a granted patent (Nitta, 2005a-c).
- The GIP Premium is the payment by patent applicants at the issue of a patent as an insurance fee to guarantee financial profits from their patent in the future. This guarantee would occur when the GIP System financially assists impoverished users to access a needed technology,

and consequently the System would prevent such users from invoking the safeguard measures that are presently in place as a provision of the current patent system (Nitta, 2005a-c).

- The GIP Tax is a kind of "green tax" to internalize the ecological and sociological externalities that patent monopolies induce (Nitta, 2005a-c). The Tax would be collected from successful patentees based on their patent-related earnings, including license royalties and infringement compensations by enforcing a patent right. These patentees would pay the Tax in addition to paying a maintenance fee for their patent.
- The GIP Insurance is an insurance payout from the GIP System to a patentee in compliance with the claim from the patentee. Once a patentee receives this Insurance, he or she would non-commercially transfer a patent-protected technology to its users who cannot obtain the technology due to the lack of capital. This non-commercial transfer would typically include a patent license without cost and discounted sales of patented products and services. In this circumstance, the GIP Insurance would serve to offset the deficiency in the revenues that the patentee expected to earn through a regular transfer of the technology. As a result, the Insurance would compensate for the loss in the patentee's profits from his or her patent.
- The GIP Aid is a disbursement from the GIP System to a national authority in response to the authority's request on behalf of a patentee and/or technology users. Once the national authority receives the Aid, they would distribute it to not only a patentee but also technology users in order to assist the users in obtaining a patented technology. In particular, the national authority, rather than technology users, would assume the royalty payment if the users have no financial power to pay such royalty. The authority would also subsidize the purchase of patent-protected technologies for such users. Through these financings, the GIP Aid would ultimately be transmitted to a patentee who would bear the cost of the GIP Trust Fund.

Table 1. Three components of the revenue for GIP Trust Fund.

	Payer	Receiving organization		Timing
		First	Final	
GIP Reserve	Patent applicant and patentee (Indirect)	Patent office (Official fee)	IBIP	During prosecution and maintenance
GIP Premium	Patent applicant (Direct)	IBIP	IBIP	As paying issue fee
GIP Tax	Patentee (Direct)	IBIP	IBIP	As paying maintenance fee

Table 2. Two components of the disbursement from GIP Financial Assistance.

	Recipient	Beneficiary	
		First	Final
GIP Insurance	Patentee	Patentee	Patentee
GIP Aid	National authority	Patentee and user	Patentee

CONCEPTUAL PRINCIPLES

Through the disbursement of GIP Insurance and Aid, the GIP System is intended to facilitate the widest prevalence of green technologies possible in accordance with two basic principles: the Balance Shift and Patent Insurance (Nitta, 2005a-c, 2006).

Balance Shift: An Internalization of External Costs

According to the reward doctrine (see *e.g.*, Miller & Davis, 2000), patent rights are granted for an innovation as a reward for the full disclosure of that innovation. In other words, the current patent system achieves a balance between a patent monopoly and the information disclosure of the invented technology. The patent monopoly is a benefit weight for patentees, and the information disclosure is a benefit weight for the public. However, the present system overlooks another important weight for the public: compensation for the negative impacts or "external costs," which was the central conception in the Pigouvian scheme of neoclassical economics and is now so in ecological economics (see *e.g.*, Daly & Farley 2004).

The current patent system has generated a considerable amount of external costs. That is to say, patent monopoly increases capital intensity for a patentee by blocking unauthorized access to a patented technology. This heightened capital intensity is the financial driving force for technological progress because such capital resource enables a patentee to invest in further research and development. While patent-driven technological progress has improved our living standards, this progress has induced various environmental and social degradations. For example, haphazard technological progress results in too much consumption of natural resources. In addition, patent monopolies have enhanced poverty by preventing the poor from obtaining essential products such as medicines. These environmental and social degradations have generated enormous negative costs in our society.

To reflect or internalize these negative external costs, the GIP system would establish a new balance of benefits between patentees and the public in that the system would put a new benefit weight on the public side by forcing patent applicants and owners to pay for the GIP Trust Fund. While bearing the cost of the GIP Trust Fund, patent applicants and holders, who

are major beneficiaries in the current patent system, would contribute to the elimination of the environmental and social degradations that the present patent system produces. Through this mechanism, the GIP system would function as the wealth re-distributor from patentees to the public (Nitta, 2005a&b).

Patent Insurance: A Compensation for Intellectual Privilege Damage

In return for contributing to the GIP Trust Fund, patentees would obtain insurance for their intellectual property and the associated profits against the erosion of patent rights. This insurance would ensure that patentees not only collect their early investments but also earn reasonable rewards for developing new technologies even when technology users cannot afford to pay for that technology. This guarantee would occur when the GIP system compensates loss or damage involved in the patentee's intellectual property and its profits through the disbursement of financial assistance to assume the payment for technology on behalf of users with a scarcity of capital.

Since GIP Financial Assistance would assist users in accessing necessary technologies, it would circumvent the erosion of patent rights, which is caused by invoking the safeguard measures or flexibilities stipulated with the current patent system. These safeguard measures include compulsory licenses as well as generic copy productions and associated price collapses of brand products.

GIP Financial Assistance, therefore, would achieve mutual benefits for patentees and technology users. This two-sided benefit would convince patent applicants and owners to contribute to the GIP Trust Fund. Moreover, the guarantee of earning profits by the GIP system would inspire inventors' incentives for eco/socio-friendly technologies even when those technologies normally are not profitable but essential for society. Actually, the markets of most eco/socio-friendly technologies are still immature and many users of such technologies do not have the sufficient financial capacity to obtain those technologies. Through the distribution of GIP Financial Assistance, the GIP system would serve as a catalyst for the expansion of eco/socio-friendly industries.

INTERNATIONAL BANK FOR INTELLECTUAL PROPERTY (IBIP)

These basic concepts driving the GIP scheme would be implemented by the International Bank for Intellectual Property, or the IBIP. The IBIP would be a financing institution proposed to be an affiliated entity of the World Intellectual Property Organization (WIPO) and it would function as the central institution to operate the GIP System (see Figure 1).

The IBIP's work would include potentially far-ranging operations: for example, collecting the GIP Reserve, Tax and Premium through each patent office; creating and administrating the GIP Trust Fund; reviewing and approving the application for GIP Financial Assistance; disbursing and managing the Assistance; and monitoring the employment of the GIP Financial Assistance and the implementation of technology transfer.

While the IBIP would serve as a major affiliated entity of the

WIPO, the IBIP would also work in close conjunction with relevant organizations. These organizations would include the following: policy-making institutions at the global level, such as the World Trade Organization (WTO); agencies within the UN system, such as the World Health Organization (WHO, for essential drugs), the Global Environment Facility (GEF, for renewable energy technologies), the UN Environment Programme (UNEP), the UN Development Programme (UNDP) and the UN Commission on Sustainable development (UNCSD); multilateral development banks (MDBs), as typified by the World Bank, and other multilateral financial institutions; the governmental institutions of a given territory in which a patentee has established a patent right; and nongovernmental and not-for-profit organizations (NPOs). As a result of partnerships formed with these organizations, the IBIP would benefit not only from extensive consultations and professional advice for the management of the GIP System, but also from cofinancing for the dissemination of eco/socio-friendly technologies.

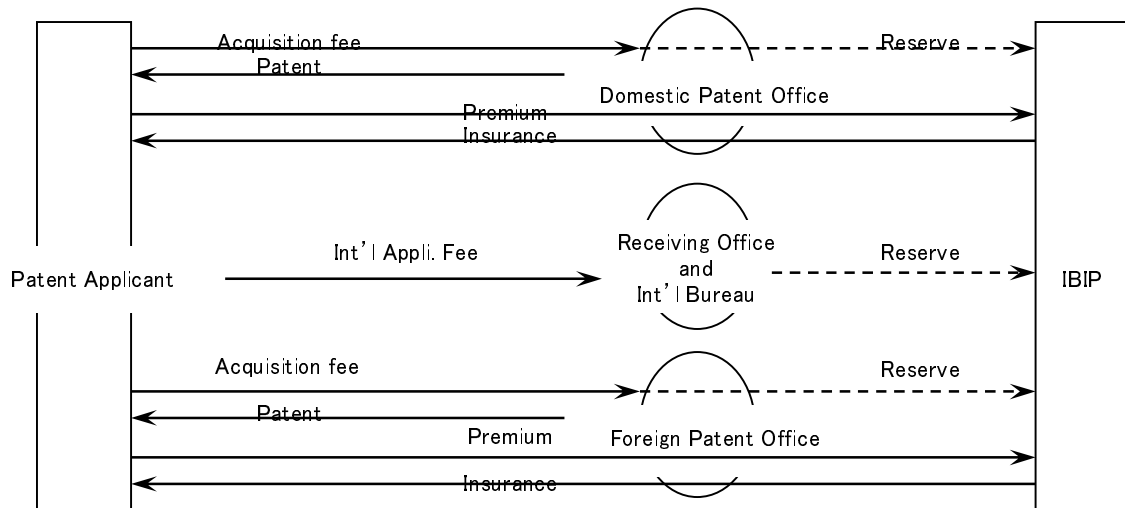


Figure 2. GIP Reserve and Premium from a patent applicant.

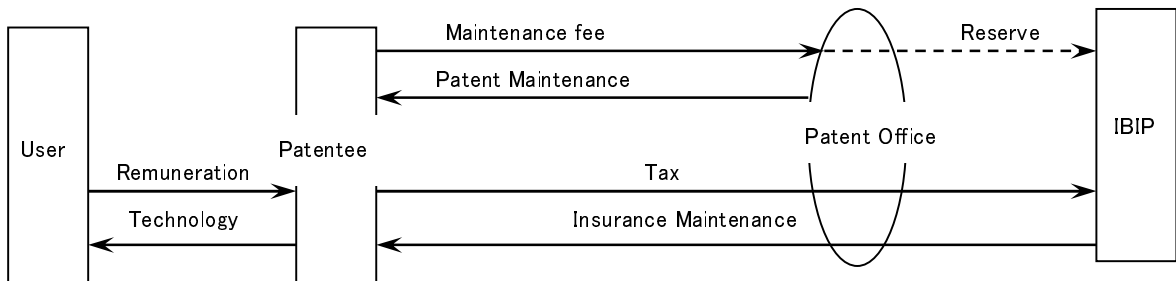


Figure 3. GIP Tax from a patentee.

FUND GENERATION

Those who would bear the cost of the GIP Trust Fund to accelerate the distribution of green technologies are two major players in the current patent system: patent applicants and patentees (see Table 1). More specifically, patent applicants would assume not only direct responsibility for financing the Fund through the payment of the GIP Premium but also indirect responsibility through the GIP Reserve. Similarly, patentees would be directly obliged to finance the Fund by paying the GIP Tax, and indirectly by paying the GIP Reserve.

Financing by Patent Applicants

The upper stream of Figure 2 illustrates that within a given domestic territory, a patent applicant would acquire a patent from the domestic patent office in return for the payment of various official fees during the prosecution. These "acquisition fees," including the fees for application, examination and issue of a granted patent, would primarily finance operating and non-operating overheads for the patent office. From this non-operating overhead, the patent office would allocate the GIP Reserve, which would be provided to the IBIP.

In addition to the Reserve, the IBIP would receive the GIP Premium that an applicant would pay with the issue fee to the domestic patent office when the patent is granted and issued at the end of prosecution. The patent office would transmit the Premium to the IBIP with necessary information of the granted patent, for example, the dates of filing and priority; the numbers of application, publication and patent; the names of inventors, applicants, a patentee and assignee; the title of the invention; and the records of prosecution and payments. Once the IBIP receives the GIP Premium from a patentee, the Bank would render the GIP Insurance to the patent. The GIP Insurance would guarantee that patentees earn reasonable financial rewards for inventing a green technology and establishing a corresponding patent right even when technology users cannot afford to pay the costs to obtain the technology.

In the middle stream of Figure 2, an applicant would file an international application associated with a set of international application fees when the patent applicant chooses the PCT route as a procedure to seek a patent in one or more foreign territories. The international application would be sent to the International Bureau of the WIPO, the administrative office that supervises international applications of intellectual properties. The international application fees would cover the works in the Bureau during the international phase of the PCT route. In this case, the International Bureau would allocate and then transfer a portion of their revenues to the IBIP in the form of the GIP Reserve through a similar fashion to the domestic patent office.

The lower stream of Figure 2 represents the pursuit of a patent right in each foreign territory through an appropriate prosecution route such as the Paris Convention, a bi/multi-lateral arrangement or the national phase of the PCT. When an applicant pursues a patent right in one or more foreign territories, the patent applicant would have to follow the local procedure for patent prosecution in each territory and the applicant would pay acquisition fees to each foreign patent office. In the same fashion as the domestic patent office, each

foreign office would raise the GIP Reserve, which would be derived from the payment by foreign patent applicants and sent to the IBIP. When a patent is granted, the applicant would also pay the GIP Premium accompanied by the issue fee for the granted patent to individual foreign patent offices. By paying the Premium to each foreign patent office, an applicant would buy the GIP Insurance valid in each territory where his or her patent right has been established. Foreign patent offices would transmit the GIP Premium to the IBIP with the necessary information for the granted patent.

Financing by Patentees

To keep his or her patent right effective, a patentee would have to pay a maintenance fee to the patent office at intervals of several years during a patent term (see Figure 3). The patent office would collect the fees and then allocate the GIP Reserve from its revenue, which would be transferred to the IBIP. In addition, the IBIP would impose the GIP Tax on patentees when they pay a patent maintenance fee. The Bank would determine the rate of the Tax based on the total amount of the patent-related incomes that the patentee has earned during the latest interval of the maintenance fee. These incomes would include royalty payments for a patent license and compensation payment through infringement actions. As a reward for the maintenance fee and GIP Tax, the patent office would maintain a patent right and the IBIP would keep the GIP Insurance effective, which would ensure the patentee to obtain financial profits generated by the patent right.

REQUEST AND DISTRIBUTION OF THE GIP TRUST FUND

From the GIP Trust Fund financed by the GIP Reserve, Premium and Tax, the GIP System would disburse Financial Assistance in response to a request from a patentee, technology users and/or their national government. Figure 4 represents the process flow during the request and distribution of the GIP Trust Fund. This process consists of three phases: the User/Patentee Phase, the National Authority Phase and the IBIP Phase. In each phase, a different player would primarily take action toward the unimpeded transfer of needed technologies, including products, methods and services.

USER/PATENTEE PHASE

As shown in Figure 4, the User/Patentee Phase would be the first stage in the process for achieving successful transfer of eco/socio-friendly technologies. In this phase, the two major players would be: a patentee, who holds a patent right and exclusively provides patented technology, and technology users, who cannot access or utilize the technology due to its higher price elevated by the patent protection. To access such technology, the users would negotiate the price of the technology with the patentee, typically utilizing volume discounts. This negotiation between a patentee and technology users would be the most localized effort to facilitate the transfer of a patented technology throughout the three phases among the GIP Scheme.

If those players were to come to an agreement on the price-reduction for a patented technology, the users and patentee would no longer need the GIP System. Even without the assistance of the system, users would receive a technology in return for an appropriate financial remuneration to a patentee. If, on the other hand, they failed to reach an

agreement, technology users and the patentee would be forced to take further action for acquiring the technology. To support their action, the GIP Scheme would open a new legal avenue for technology users, a patentee, or both players to file the Request for Arbitration with their national authority. The authority would be a government ministry or agency which

presides over economic, commercial and industrial activities in the territory wherein a patent right has been established and users intend to employ the technology the patent protects. As indicated in Figure 4, the Request for Arbitration would allow technology users and a patentee to migrate from the User/Patentee Phase into the National Authority Phase.

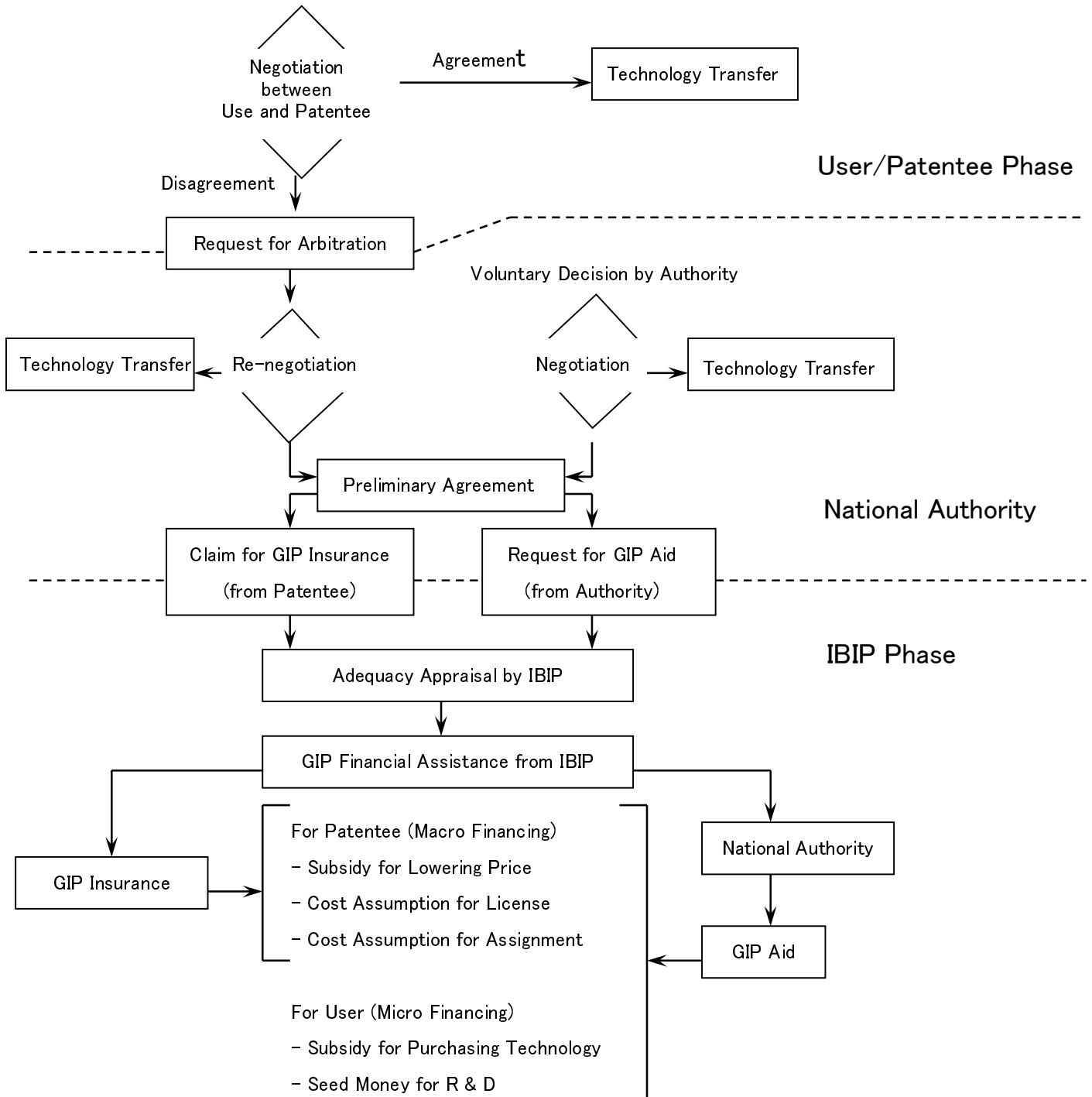


Figure 4. Procedural Flow in the Green Intellectual Property scheme.

NATIONAL AUTHORITY PHASE

The National Authority Phase would be the second stage of the GIP Scheme, in which a national authority would play a central role in removing an obstacle against the transfer of a green technology. During this phase, a national authority would provide leadership and coordination for the arbitration and conciliation of patent disputes between technology users and a patentee.

Once a national authority receives the Request for Arbitration, they would inaugurate a series of services with the widest range possible to resume the negotiation between technology users and a patentee. In addition, a national authority would be able to voluntarily commence the process in the National Authority Phase even without the Request for Arbitration. That is to say, the authority themselves would identify a patented technology and then provide necessary services for the negotiation between that technology's users and its patentee if the patent monopoly for that technology harms environs rather than improving public welfare. In this government-initiated case, the national authority would create a setting in which technology users and a patentee would be urged to conduct a negotiation for the effective transfer of a green technology.

If, under the guidance of a national authority, technology users and a patentee successfully reach an agreement on substantially reducing the price of a patented technology, the authority would terminate their services and the patentee would provide the technology. If, on the other hand, those players fail to arrive at a compromise, the national authority would propose a Preliminary Agreement to technology users and a patentee in order to forward the process under the strong leadership of the government. The Preliminary Agreement would be one of the major outcomes of the National Authority Phase for the transfer of a green technology under the condition that GIP Financial Assistance would be made available.

The Preliminary Agreement would be a series of binding contracts once the IBIP approves GIP Financial Assistance. The patentee would then allow technology users to access the patented technology while obeying the conditions stipulated in the Agreement. These conditions would be concerned with, for example, the following: the type and price of technology transfer; the scope of the technology to be transferred; the list of technology users and providers; the date of commencement term and estimated amount of the technology transfer; the required amount and term of GIP Financial Assistance; and the recipient of that Assistance. These contracts in the Preliminary Agreement would be a major requirement for technology users, a patentee and a national authority to enter the next stage: the IBIP Phase.

IBIP PHASE

The third stage of the GIP Scheme is the IBIP Phase. In this phase, the IBIP would provide leadership and coordination on all operations to promote the dissemination of green technologies. These operations would typically include receiving an application for GIP Financial Assistance, the adequacy appraisal of this application, and the distribution and compliance monitoring of the Assistance.

Application for GIP Financing

Depending on who files, the IBIP could receive an application for GIP Financial Assistance in two forms: a Claim for GIP Insurance from a patentee and/or a Request for GIP Aid from a national authority. While, in other words, GIP Insurance would be initiated by a private sector, GIP Aid would be inaugurated by a public sector. For both types of these applications, one of the major requirements would be the establishment of the Preliminary Agreement at the National Authority Phase. This agreement would be required to commit commencing the unprofitable transfer of an eco/socio-friendly technology in a circumstance favorable for technology users once GIP Financial Assistance is delivered.

Claim for GIP Insurance (Patentee-Initiated Process):

Through filing a Claim for GIP Insurance, a patent owner would be requesting indemnification from the IBIP to cover the loss or damage of the owner's intellectual property and associated profits, which is caused by enforcing the unprofitable transfer agreement of green technology. According to the Preliminary Agreement contracted during the National Authority Phase, a patentee would be required to transfer a patented technology through not only the substantially discounted sales of corresponding products and services, but also the license or assignment of a patent right at a markdown cost. In this situation, the patentee could ask the IBIP provide GIP Insurance in order to replenish the deficiency of the revenues that the patentee would have expected to earn through profitable but faithful transactions under a normal patent protection. Consequently, the existence of GIP Insurance would strongly convince a patentee to agree with technology transfer even within a thin profit, which would lead to the unimpeded transfer of green technologies. The eligibility for a patentee to claim GIP Insurance would be the payment of both the GIP Premium during the prosecution for acquiring a patent right and the GIP Tax during the maintenance of the right in the patent term depending on the patent-related incomes that the patentee has earned by enforcing the right.

Request for GIP Aid (Authority-Initiated Process):

Another type of assistance application would be a Request for GIP Aid. This Request would allow a national authority, instead of a patentee, to solicit GIP Financial Assistance on behalf of technology users and/or a patentee in their territory. If the authority recognized that the patent monopoly of a green technology had proven to harm their environment and society rather than ameliorating them, that authority would be determined to force to eliminate the barrier against technology transfer. In this case, the national authority would initiate the GIP process by submitting the Request for GIP Aid to the IBIP based on either their voluntary decision or the demand from technology users and/or a patentee during the User/Patentee Phase.

Once the Request for GIP Aid is approved, the IBIP would disburse GIP Financial Assistance to the national authority. The authority, then, would distribute the financial aid to technology users in two typical forms of: assumption of patent royalty payment, and subsidies for purchasing patented products and services. While this financial assistance would not seem to directly benefit a patent applicant/owner despite his or her economic burden for the cost of the GIP Trust Fund,

it would ultimately pass to the patent applicant/owner through users' payments to access the patented technology. This fact means that GIP Aid would function as an indirect payout of insurance whereas GIP Insurance would be a direct payout to patent applicants/owners.

Adequacy Appraisal

Claims for GIP Insurance and Requests for GIP Aid would be subject to extensive evaluation by the IBIP. Once the IBIP receives these applications for GIP Financial Assistance, the Bank would begin careful review of all the works conducted during the User/Patentee and National Authority Phases. These works would typically include the records of the technology transfer negotiations and the contracts of the Preliminary Agreement created during the National Authority Phase. These reviews, in particular, would focus on the sufficiency of the efforts to reach an agreement on technology transfer without GIP Financial Assistance. To avoid thoughtless employment of GIP Financial Assistance, these efforts would respect similar provisions to those for compulsory license, which are stipulated in the Article 31(b) of the TRIPs agreement.

In addition, the IBIP would review the application to ensure both that the considered technology is truly an eco/socio-friendly technology and that the delivery of GIP Financial Assistance for the technology transfer is environmentally and socially sound. During this process, the IBIP would ascertain that the intended technology differs from most conventional technologies which have been financed by traditional funding to merely stimulate economic growth and which may unexpectedly affect the environment and society adversely. These reviews, specifically, ensure that GIP financing is consistent with the basic concepts and principles that have been identified, elaborated and established in response to a wide range of environmental and social issues.

Such concepts and principles are derived from various results of environmental and social affairs, including national and international instruments, arbitral and judicial decisions, assertions and commentaries by experts, customary practices and widely accepted notions. These concepts and principles, for example, encompass the fundamental human right to a healthy environment and society, the right to development and the obligation not to cause environmental and social harms, the reconciliation between the needs of development and the protection of an environment and society, sustainable development, intergenerational and intragenerational equity, common heritages and concerns, the common but differentiated responsibilities to protect an environment and society, the duty of impact assessments on an environment and society, the duty to prevent and precaution environmental and social harms, the principle of subsidiarity, the duty to implement effective environmental and social legislations, the duty to provide prior notification and to consult in good faith for dispute avoidance and dispute resolution, and good neighborliness and the duty to cooperate (see *e.g.*, Hunter, 2002).

Among these concepts and principles, the duty to assess environmental and social impact would be to be particularly respected. While being prepared during the National Authority Phase, the Preliminary Agreement would undergo an

environmental and social assessment to determine whether its intended technology would reduce ecological and sociological impact as well as contribute to keeping human activity's scale at a sustainable level (Nitta, 2005b). In particular, a patentee, technology users and/or a national authority would be responsible for conducting the assessment of ecological and sociological impact. The IBIP, if required, would provide professional and technical assistance for the assessment. As a result from this assessment, the Preliminary Agreement and the application for GIP Financial Assistance would have to demonstrate that the technology would assist our society both to suppress unsustainable growth and to promote sustainable development through the amelioration of society. The IBIP would carefully review the outcomes of the assessment using the most comprehensive scopes possible for identifying the impact on an environment and society. The IBIP would ascertain that the distribution of the technology supports the attainment of fulfilling and enriching a sustainable society (Nitta, 2005b).

In addition to the environmental and social assessment, the IBIP would focus on the stability of the patent right that protects the concerned technology. The reliability and credibility analysis of the patent under review would be a major obligation by the applicant for GIP Financial Assistance, i.e., a patentee, technology users and/or a national authority. Before applying for GIP Assistance, an applicant for the Financial Assistance would review the prosecution history for patent acquisition to verify its patentability. The applicant would also reevaluate a patent right in the most profound manner possible in order to deny potential opposition actions for contesting a granted patent, including invalidation trial, petition and re-examination. Through these reviews and reevaluations, the burden would be upon the applicant for Assistance to prove that the patent right has sufficient validity to allow the disbursement of GIP Financial Assistance. These reliability and credibility analyses would help the IBIP to minimize the risk of patent revocation after the Bank disbursed GIP Financial Assistance.

Distribution of GIP Financial Assistance

To accelerate the effective transfer of eco/socio-friendly technologies, the IBIP would offer two basic types of financial assistance: GIP Insurance to a patent owner and GIP Aid to a national authority. As detailed descriptions in subsequent sections have indicated, GIP Insurance is a financing which would have a macroscopic effect on the efficiency of technology transfer through the regulation of patent right ownership. GIP Aid is another financing which would have not only a macroscopic but also microscopic effect on technology transfer efficiency by enabling each user to purchase a given technology.

GIP Insurance: Once the Claim for GIP Insurance is approved and authorized by the IBIP, the Preliminary Agreement stipulated during the National Authority Phase would be completed. Following this completion, the Bank would disburse GIP Insurance to a patentee in order to compensate financial loss or damage involved in the patentee's intellectual property and the profits it generates, which would be jeopardized by the technology transfer. When a patentee receives GIP Insurance, the patentee would be required to commence the unprofitable transfer of a green technology in

compliance with the complete agreement.

The GIP Insurance is designed to cover at least three basic kinds of loss or damage on an intellectual property depending on the type of technology transfer.

- The first type of technology transfer is unprofitable sales of a patented technology at an agreed-upon price in the Preliminary Agreement while a patentee maintains his or her ownership. In other words, receiving GIP Insurance from the IBIP, a patentee would exclusively sell patented products and services at little or no cost in accordance with the Preliminary Agreement created during the National Authority Phase. For this type of technology transfer, GIP Insurance would function as a subsidy for lowering the prices of patented technologies by offsetting the shortage in the patentee's incomes protected by his or her patent.
- The second type of technology transfer is a patent license for non-compulsory or agreed-upon safeguard measures, typically including the manufacture, sales and parallel import of generic and brand products. These licenses would be offered with low or no royalty from a patentee to not-for-profit providers such as government organizations. Such patentee would obtain a substantial royalty from the IBIP instead of a licensee in the form of a cost indemnification or assumption by GIP Insurance. The licensee would then be able to distribute the technology at an affordable price as a result of less or no burden to pay a royalty.
- The third type of technology transfer is the assignment of a patent right. A patentee would sell his or her patent at little or no cost to a not-for-profit assignee such as a government organization or a not-for-profit provider. The patentee would obtain substantial remuneration from the IBIP instead of an assignee in the form of a cost indemnification or assumption by GIP Insurance. This would allow the technology to be distributed at an affordable price.

For these three types of technology transfer, in short, GIP Insurance would serve as a regulator for the ownership of patent rights and the prices of patented technologies, which macro-financially would affect the intellectual property market in a similar fashion to conventional macroeconomic measures such as subsidies and infusions of public funds.

GIP Aid: If the IBIP were to ratify the Request for GIP Aid and declare the Preliminary Agreement effective, the Bank would transmit the GIP Aid not to a patentee but to the national authority responsible for administering the patentee's right. In contrast with GIP Insurance, GIP Aid would be disbursed by a national authority to patentees and/or technology users.

GIP Aid, in particular, is intended to support at least five types of technology transfer: three types that would also be covered by GIP Insurance and two types only covered by GIP Aid.

- The three types of technology transfer covered by both GIP Insurance and Aid would be the unprofitable sales of a patented technology, the provision of patent licenses and the release of patent assignments. Although GIP Aid and Insurance would work in almost the same way for these three types, both forms of financial assistance would differ in that the direct subsidizer of GIP Aid would be a national

authority instead of the IBIP. Similar to GIP Insurance, GIP Aid would be delivered to a patentee in order to macro-financially offset the shortfall of patentee's earnings caused by the agreed-upon transfers of technologies.

- The fourth type of technology transfer, which would only be covered by GIP Aid, would be the profitable sales of a patented technology at market price. For this type of transfer, a national authority would distribute GIP Aid not to a patentee but to technology users who seek to purchase patented products and services. Since the recipients of GIP Aid would be each technology user, the Aid would be expected to serve as a micro-financial measure in the form of a subsidy for individual users to obtain patented technology. A feature of this procedure is that a national authority would receive GIP Aid on behalf of technology users. This feature, in particular, would be emphasized when those users urge their national authority to apply for GIP Aid through the Request for Arbitration during the User/Patentee Phase. In this case, the apparent beneficiaries of the Aid would be technology users while patent applicants and patentees would bear the cost of the GIP Trust Fund. The ultimate beneficiary, however, would be the patentee because GIP Aid would be passed on to that patentee while technology users would purchase and pay for the patented product and service. This mechanism would maintain the relevance of the GIP framework in whole. In addition, the disbursement of GIP Aid to such users would stimulate the incentive for buying a technology, which would then lead to an increase in the sales of that technology.
- The fifth type of technology transfer, which would be supported by solely GIP Aid, would be the non- or semi-commercial transfer of technologies for researching and developing viable eco/socio-friendly technologies at an early stage. For this type of transfer, a national authority would identify the intended eco/socio-friendly technology to be created, nurtured and widely distributed in its territory. If the research and development of such future technology needs to incorporate other basic technologies that are patented and consequently too costly to be accessed, a national authority would pursue GIP Aid. GIP Aid would be used to achieve the successful transfer of basic technologies required for developing a future technology. In this case, the Aid would be regarded as a micro-financial assistance to provide seed money for innovative eco/socio-friendly technologies.

The above discussions indicate a variety of potential functions of GIP Financial Assistance in the form of GIP Insurance and Aid. Among these functions, one of the considerable features is providing a feasible instrument which would assure technology users access to a needed technology, and consequently prevent them from invoking safeguard measures while protecting a patent right from its erosion.

Compliance Monitoring

The implementation of technology transfer would be the responsibility of the participants who are involved in the Preliminary Agreement during the National Authority Phase, typically including technology users, a patentee and a national authority. The IBIP would be responsible for supervising and monitoring how GIP Financial Assistance is used and if the stipulations of the agreement are fulfilled. After the end of

the disbursement period of GIP Financial Assistance, the IBIP would conduct evaluations to identify the accomplishments of the technology transfer, its advantages and disadvantages, problems caused and lessons learned.

CONCLUDING REMARKS

Simply put, the GIP system is a fusion of the patent system and public funding, which would have ample capacity to promote eco/socio-friendly technologies through the conciliation between patentees and technology users. Moreover, the GIP system would generate enough financial feasibility to be successfully implemented. For example, the maximum possible amount of annual revenue for the GIP Trust Fund has been estimated to reach several tens of billions of US dollars as was calculated with data from the years 2003 and 2004 (Nitta, 2005c, 2006). This estimation means that the GIP system would be able to substantially accelerate a variety of eco/socio-friendly technologies, typically including renewable energy technologies such as solar power generation (Nitta, 2006) and essential medicines such as AIDS/HIV drugs (Nitta, 2005c). What, in addition to this ability and feasibility, the GIP system needs is only the strong backing of comprehensive public and private sectors at the national and international levels.

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