

CDIP/15/6 CORR. ORIGINAL: ENGLISH DATE: MARCH 9, 2015

# **Committee on Development and Intellectual Property (CDIP)**

Fifteenth Session Geneva, April 20 to 24, 2015

PATENT-RELATED FLEXIBILITIES IN THE MULTILATERAL LEGAL FRAMEWORK AND THEIR LEGISLATIVE IMPLEMENTATION AT THE NATIONAL AND REGIONAL LEVELS – PART IV

prepared by the Secretariat

- 1. In the context of the discussions on Development Agenda Recommendation 14, the Committee on Development and Intellectual Property (CDIP), at its thirteenth session, requested the Secretariat to prepare a document that covered the following two new patent-related flexibilities:
  - (a) the flexibility to apply or not, criminal sanctions in patent enforcement (TRIPS Art. 61); and
  - (b) measures related to security which might result in a limitation of patent rights (so-called "security exception") (TRIPS Art. 73).
- 2. The present document addresses the above-mentioned request.
  - 3. The CDIP is invited to take note of the contents of this document and its Annexes.

# **TABLE OF CONTENTS**

I. E	XECU	ΤΙΥΕ	SUMMARY	3
			ILITY TO APPLY OR NOT CRIMINAL SANCTIONS IN PATENT	4
A.	. 11	NTR	ODUCTION	4
В.	. Т	HE	NTERNATIONAL LEGAL FRAMEWORK	4
C.	. N	NATIONAL IMPLEMENTATION		
	(a	a)	The conduct	7
	(1	b)	Sanctions	9
	(0	c)	Aggravating circumstances	9
			RELATED TO SECURITY WHICH MIGHT RESULT IN A LIMITATION OF SECURITY EXCEPTIONS")	
A.	. 11	NTR	ODUCTION	11
B.	. Т	HE	NTERNATIONAL LEGAL FRAMEWORK	11
C.	. N	ITA	ONAL IMPLEMENTATION	12
	(;	a)	Security measures related to patent prosecution	12

## I. EXECUTIVE SUMMARY

- 4. At the thirteenth session of the CDIP held from May 19 to 23, 2014, the Committee discussed document CDIP/10/11 on Future Work on Patent-Related Flexibilities in the Multilateral Legal Framework and agreed that a document, based upon factual compilation with no recommendations whatsoever, on two new patent-related flexibilities be prepared for discussion at a future session of the CDIP, namely, the flexibility to apply or not criminal sanctions in patent enforcement (TRIPS Agreement Art. 61) and measures related to security which might result in a limitation of patent rights (so-called "security exception") (TRIPS Agreement Art. 73).
- 5. The methodology followed in the preparation of this document is the same as that adopted by the CDIP concerning previous work on patent-related flexibilities, namely CDIP/5/4 Rev., CDIP/7/3 Rev. and CDIP/13/10 Rev. This document addresses a non-exhaustive number of flexibilities in the patent area, describing the conceptual development for each. This document includes two annexes; namely, tables that categorize diverse aspects of the flexibilities studied and related legal provisions in a number of jurisdictions.
- 6. This document is divided into two parts:
  - (a) Part I focuses on the flexibility to apply or not, criminal sanctions in patent enforcement. After a short introduction, a reference is made to the international legal framework. Following the reference to the international legal framework, the document identifies whether normative provisions on criminal sanctions exist at the national level. Lastly, Part I categorizes the main features of existing legal texts on such criminal sanctions.
  - (b) Part II provides an illustration of the different measures implemented at the national level concerning security under the so-called "security exception".

# THE FLEXIBILITY TO APPLY OR NOT CRIMINAL SANCTIONS IN PATENT **ENFORCEMENT**

#### Α. INTRODUCTION

- 7. In order to be effective, intellectual property systems worldwide establish remedies and sanctions for the infringement of title holders' rights. They can be broadly categorized in three groups: civil remedies, administrative remedies and criminal sanctions. The latter, which are the subject of this document, are the consequence of the violation of criminal law, which defines certain acts as a crime.
- There is a long tradition of the protection of certain categories of intellectual property 8. rights by criminal sanctions, e.g., the United States of America in 1897 added criminal sanctions to the Copyright Act of 1790, which only applied to a limited number of infringing acts carried out "wilfully" and "for profit". In the patent field, an interest in criminal sanctions has been observed in certain jurisdictions<sup>1</sup>, and implementation of criminal sanctions has taken place in a number of countries. However, scholars and industry have drawn attention to the problems that may arise from the enforcement of patent rights through criminal sanctions.

#### THE INTERNATIONAL LEGAL FRAMEWORK В.

Regarding the international legal framework, Article 61 of the TRIPS Agreement establishes that "Members shall provide for criminal procedures and penalties to be applied at least in cases of wilful trademark counterfeiting or copyright piracy on a commercial scale". Concerning this provision, the World Trade Organization (WTO) Panel Report in the case China - Measures Affecting the Protection and Enforcement of Intellectual Property Rights (WT/DS362/R) ("China – Intellectual Property Rights")<sup>5</sup> stated that the use of the word "shall" indicated that Art. 61 imposes an obligation on WTO Members, but also stated that it identified "no fewer than four limitations on the obligation that it sets forth." Namely, that the obligation of criminal sanctions applies to trademarks and copyrights rather than to all intellectual property rights covered by the TRIPS Agreement; it applies to counterfeiting and piracy rather than to other forms of infringement; the obligation applies when the act of trademark counterfeiting or

Among the most prominent features of the draft proposal prepared by the European Commission for EU Criminal Sanction Directive was the introduction of criminal sanction - at the national level - for patent infringement. It is worth noting that during the first reading of the proposed Directive (April 2007), the Parliament adopted a resolution that made significant amendments. These clarified that criminal sanctions should only apply to counterfeiting and piracy.

For instance, Algeria, Angola, Antigua and Barbuda, Argentina, Armenia, Bahamas, Barbados, Belarus, Belgium, Belize, Bhutan, Botswana, Brazil, Bulgaria, Cabo Verde, Cambodia, Colombia, Comoros, Croatia, Cuba, Mexico, Philippines, Russian Federation, Sweden, Switzerland, Thailand, among others. For more details see Annex I to this document containing national and regional provisions of law.

Irina Manta highlighted on one hand that a statute providing for criminal sanctions for patent infringement would presumably request willfulness of the infringer's mens rea while on the other hand drew attention to the difficulties in setting the threshold for willful infringement in criminal sanction in the patent field. In contrast to other intellectual property categories, if the threshold is too high, then fewer infringers will be prosecuted, and the advantages of criminal enforcement will be heavily reduced. But, if the threshold is too low, then such a sanction could deter those afraid of suffering criminal sanctions from innovating, "The Puzzle of Criminal Sanctions for Intellectual Property Infringement", Harvard Journal of Law & Technology, Vol. 24, Number 2, 2011, pages 495 to 498.

Tim Frain, Director of IP matters at Nokia, commenting on the EU Directive, called attention to how managers, when taking decisions on using a given technology, take risks concerning the validity of granted patent. Once there is room for challenging the patent, they move forward; however, the situation would be a different one if the manager risks criminally liability. Cited by Paul Meller, Prison over Patents? Proposed EU Law Unites Foes, N.Y. Times, Dec.9, 2005. Similar views were expressed by the European Generic Medicines Association EGA in a final position paper on the Amended Proposal for a European Parliament and Council Directive on Criminal Measures aimed at Ensuring the Enforcement of Intellectual Property Rights (May 2006).

Panel Report China - Measures Affecting the Protection and Enforcement of Intellectual Property Rights

(WT/DS362/R) (26 January 2009) ("China – Intellectual Property Rights").

the copyright piracy is "willful"; and when such acts take place "on a commercial scale". Concerning the first of these limitations, the Panel made it clear that criminal sanctions are not mandatory in respect of intellectual property rights other than trademark and copyright.

- 10. The fourth sentence of Article 61 implies the nonexistence of an obligation at the multilateral level for criminal sanctions for intellectual property right infringement other than trademark and copyright. The first clause of the fourth sentence of Article 61 in fact is permissive in nature: "Members may provide for criminal procedures and penalties to be applied in other cases of infringement of intellectual property rights", in contrast to mandatory nature the first sentence. In this regard, the Panel Report in *China Intellectual Property Rights* stated: "The fourth sentence of Article 61 gives Members the option to criminalize other infringements of intellectual property rights, in particular where they are committed willfully and on a commercial scale. Despite the potential gravity of such infringements, Article 61 creates no obligation to criminalize them".<sup>6</sup>
- 11. Since patent are excluded from that provision, it means that no international obligation exists for WTO Members to adopt criminal sanctions for patent rights infringement. In this regard, Article 61 specifies that "Members may provide for criminal procedures and penalties to be applied in other cases of infringement of intellectual property rights, in particular where they are committed willfully and on a commercial scale". Providing for criminal sanctions might be a strong deterrent from engaging in business activities based on the violation of IPRs; in fact, it has been noted that "the risk of facing criminal sanctions may often be strong enough to dissuade a firm from activities that the titleholder may argue are infringing".
- 12. With respect to patent rights, a different approach is adopted concerning criminal sanctions than the approach for copyright and trademarks. Several explanations may account for this fact. For instance, it has been argued that infringers of trademarks and copyrights "cause more harm and/or require harsher punishments for deterrence than infringers of patents" or that while industries lobby for stronger protection for other categories of intellectual property (especially copyright), different industries are at odds with one another regarding the proper level of protection for patents".8
- 13. Concerning the introduction of criminal sanctions for patent infringement, it has been observed that "criminalization could provide incentives for willful patent infringers to cease their illegal activities (or not engage in them in the first place) and thus reduce losses to patent owners". It has been also pointed out that criminal procedures, as opposed to civil procedures, are undertaken by the State, which might be cost-saving for patent owners 10 since civil patent litigation can in fact be expensive and hardly affordable for some title holders. 11

WT/DS362/R of 26 January 2009, paragraph 7.518.

<sup>&</sup>quot;Resource Book on TRIPS and Development", UNCTAD-ICTSD Project on IPRs and Sustainable Development, 2005, page 621.

<sup>8</sup> Irina D. Manta, see *supra* footnote 3, page 472.

lrina D. Manta, see *supra* footnote 3, page 493.

Harold A. Borland, "The Affirmative Duty to Exercise Due Care in Willful Patent Infringement Cases: We Still Want It", Houston Business and Tax Law Journal, 2005, page 197.

<sup>11.</sup> According to a recent report by the American Intellectual Property Association (AIPLA), in the United States of America, the median litigation costs for patent infringement suits were the following: for a claim that could be worth less than a 1 million USD, the median legal costs were 750,000 USD. When he sum of 1 million USD to 25 million USD was considered "at risk", the total litigation costs could reach the sum of 2.8 million USD. For a claim over 25 million USD, the legal costs through the trial could reach up to 5 million USD. The high costs of this litigation dissuaded many small and medium-sized enterprises (SMEs) from initiating a case for patent infringement (AIPLA 2013 Report of the Economic Survey). However, between jurisdictions the costs may differ widely, and the AIPLA study refers exclusively to the situation in United States of America, which is referred as the example of highest cost on patent enforcement.

- Supporters of civil enforcement of patent infringements have drawn attention to the peculiarity of the patent rights and in particular, on their scope and validity. In that regard the Chartered Institute of Patent Agents (CIPA), in commenting on the project of European Union directive on criminal measures aimed at ensuring the enforcement of intellectual property rights, has observed that criminal sanctions are not necessarily appropriate in the patent field: "although patents are fully examined, it is common in infringement proceedings (after the patent is granted) that there will be arguments about the scope of the patent protection and whether it covers a particular product or process; and also the validity of the patent will be challenged; and in many cases these reflect on each other – the competitor will argue that what they are doing does not fall within the valid scope of the patent. If criminal sanctions applied to patent infringement, the uncertainties about the scope of protection and validity would give rise to a significant deterrent to competitors even considering activities which might be within the scope of a patent". 12 Additionally, some scholars 13 have stressed that the risk of over deterrence in the patent field might be quite expensive for society, since the fear of criminal sanctions might hinder the development of new technologies, including in delicate sectors for the public interest, such as public health.
- 15. Different policy reasons have been advanced for not criminalizing patent infringement; in this regard, Honorable Mr. Justice Louis Harms, Judge of Appeal, Supreme Court of South Africa, prepared a paper that was presented at the Fourth Session of the WIPO Advisory Committee on Enforcement<sup>14</sup> that identified the following: Criminal courts are generally speaking not qualified to deal with patent issues; any given patent may cover many "inventions"; the invalidity of the patent is the typical defense to infringement; the patentee's product may not be made in accordance with the patent; the infringer's product may not be a copy of the patentee's product as marketed; it is virtually impossible for law enforcement officers and border officials to determine whether any particular product is an infringing product; patent litigation is expensive; and a significant percentage of patents is revoked in the course of patent litigation.
- 16. Experience shows that criminal sanctions for the enforcement of patents rights have been implemented at the national level in a number of jurisdictions. <sup>15</sup> At the regional level, with the exception of the Bangui Agreement establishing the *Organisation Africaine de la Propriété intellectuelle*, no other examples are available since discussion at the European Union is at halt. <sup>1617</sup> Further, no examples exist at the international level, since the most recently adopted treaty in the field of enforcement, the Anti-Counterfeiting Trade Agreement (ACTA), does not deal with criminal sanctions for patent infringement.

Chartered Institute of Patent Agents, "Preliminary Comments on the proposed Directive on criminal measures aimed at ensuring the enforcement of intellectual property rights and the Council Framework Decision on measures to strengthen the criminal law framework to combat intellectual property offences", page 4.

13 Irina D. Manta, "The Puzzle of Criminal Sanctions for Intellectual Property Infringement", Harvard Journal of Law & Technology, Vol. 24, Number 2, 2011, page 499.

See *supra* footnote 2.

According to an author commenting on the EU directive on criminal measures aimed at ensuring the enforcement of intellectual property rights (so-called IPRED2, which is the second because it aims to complement the first Enforcement Directive regulating civil sanctions for IPRs infringement), "among Parliament's most popular amendments was the one carving out patents from the Directive's scope". Lisa Peets, *Criminal Sanctions Remain Complex*, Copyright World Issue No. 173, page 14

A study conducted by a consortium of consultants from different European countries, at the request of the European Commission, has stressed the differences among legislation of EU Member States on intellectual property criminal sanctions. The study stated that problems caused by transnational crimes create "a strong need for harmonization of the criminal laws of the EU Member States". In relation to patents, the study highlighted that only six Member States do not have criminal sanctions but despite this background, the criminalization of patent infringement was not proposed as one of the elements for future action. "Study on a possible modified proposal on criminal measures aimed at ensuring the enforcement of intellectual property rights", JLS/2009/A1/FWC/023.

<sup>&</sup>lt;sup>14</sup> WIPO/ACE/4/3, page 15.

# C. NATIONAL IMPLEMENTATION

17. While a certain number of countries have decided not to adopt criminal sanctions in case of patent infringement <sup>18</sup>, others have decided otherwise. Concerning the latter group, the implementation of criminal sanctions for patent infringement is very diverse. For example, according to a study<sup>19</sup>, in Europe, where no European Union norm exists in this field, only six Member States do not provide for criminal sanctions for patent infringement; Japan introduced criminal sanction for patent infringements with the enactment of the Patent Act in 1959, which when revised in 2006 to enhance the deterrent effect of infringement, increased the imprisonment term from a maximum of five years to ten years, and increased the fine from 5 million JPY to 10 million JPY; and a number of developing countries, from different regions around the world, have criminalized patent infringement.<sup>20</sup> Despite important differences among provisions of law, either patent or criminal law, there are common elements that deserve to be highlighted.

# (a) The conduct

- 18. The material conduct of the crime consists of an act related to the exploitation of the invention without the authorization of the patent holder<sup>21</sup>. Some Member States provide a more detailed description of the conduct.<sup>22</sup>
- 19. An express reference to the intentional psychological element of the crime/offense is almost always included<sup>23</sup>, since the intentionality of the infringement constitutes the basis of the application of a criminal sanction. In fact, if the act has been carried out without the intention of infringing the patent right, in principle, only a civil remedy would be envisaged. In that regard, national lawmakers have adopted different expressions: "a person who *knowingly* performs/acts (…)"<sup>24</sup>; "any person who *unlawfully and knowingly* commits (…)"<sup>25</sup>; "intention méchante ou fraudeuleuse"<sup>26</sup>; "any person who *intentionally or willfully* performs (…)"<sup>27</sup>; "any

For instance, Australia, Bolivia, Canada, Chile, China, Estonia, Georgia, Honduras, Malaysia, New Zealand, Singapore, South Africa, United Kingdom, United States of America, among others. For more details see Annex I to this document containing national and regional provisions of law.

See *supra*, footnote 17.

Out of the laws of the 159 countries that were analyzed in this study, the laws of 99 of those countries have implemented criminal sanctions in the patent field.

Argentinian Patent Law uses the expressions "defraudacion de los derechos del inventor" (defrauding inventor's rights) and "delito de falsificación" (crime of forgery), while the Belgian on the Punishment of Counterfeiting and Piracy of Intellectual Property Rights of 05/05/2007, Article 8, § 1, refers to "porter atteinte avec une intention méchante ou frauduleuse aux droits du titulaire d'un brevet d'invention".

For instance, Brazilian patent law, in Article 184 establishes that: "A crime against an invention or utility model patent is perpetrated by anyone who: I. exports, sells, displays or offers for sale, has in stock, conceals or receives, with a view to use for economic purposes, a product manufactured in violation of an invention or utility model patent, or obtained by a patented means or process; or II. imports a product that is the object of an invention or utility model patent, or obtained by a means or process patented in this country, for the purposes set forth in the preceding Item, and that has not been placed on the foreign market directly by the patent holder or with his consent." A similar structure of the conduct (i.e. listing a series of acts which can constitute an infringement of the patent rights) has been adopted by Angola, Croatia, Ecuador, Egypt, Guatemala and Nicaragua.

For instance, Andorra, Antigua and Barbuda, Barbados, Belize, Bhutan, Botswana, Cambodia, Colombia, Denmark, Equatorial Guinea, Finland, France, Kenya, Morocco, Norway, Saint Kitts and Nevis and United Republic of Tanzania. For more details see Annex I to this document containing national and regional provisions of law.

Antigua and Barbuda, Bhutan, Cambodia, Ghana, Liberia, Samoa, Sierra Leone. See Annex I to this document.

Bahrain, Article 41 of the Law No. 1 of 2004 on Patents and Utility Models as last amended by Law 14 of 2006.

Belgium, Article 8, § 1 of the Law on the Punishment of Counterfeiting and Piracy of Intellectual Property Rights of 05/05/2007 as last amended on 25/02/2011.

person who *fraudulently* uses (...)"<sup>28</sup>; "ceux qui ont *sciemment* recelé (...)"<sup>29</sup>; "*deliberate* infringement/violation"<sup>30</sup>; "person *intentionally* infringes"<sup>31</sup>; "atteintes portées *sciemment* (...)"<sup>32</sup>; "A person who, *knowingly* and *intentionally*, performs (...)"<sup>33</sup>; "*intentional* infringement"<sup>34</sup>; "*willfully* infringes(...)".<sup>35</sup>

- 20. It is noteworthy that the patents laws of some countries refer not only to intentional conduct, i.e. an act which must be committed knowingly and/or with a desire for the result of certain conduct (wilful misconduct), but also to *grossly negligent conduct*, extending the area of application of criminal sanction also to certain conducts that were not wilfully aimed at infringing the patent rights<sup>36</sup>. The *grossly negligent conduct* has been contemplated, for instance, in the patent laws of Samoa and Sweden, while in Denmark, if the infringement has been committed *grossly negligently*, only the pecuniary sanctions will be applied (however, an intention of committing the infringement constitutes an aggravating circumstance that allows the application of the sanction of imprisonment).
- 21. It is worth mentioning that the psychological element, and in particular the willfulness in infringing the patent, has importance also in countries where only civil remedies and no criminal sanctions are provided for. For instance, in the United States of America, the willful infringement of the patent gives rise to so-called punitive damages, whereas in Belgium the bad faith of the infringer plays a role in the determination of civil remedies<sup>37</sup>; finally, in the United Kingdom, if the infringement was not intentional, the damages to be paid will be reduced.<sup>38</sup>

[Footnote continued from previous page]

For instance: Belize, Article 63 (1), of the Patents Act - Cap. 253 of 21/06/2000 as last amended by the Act No. 40 of 2005; Botswana, Section 134 (6) of the Industrial Property Act (Act No. 8 of 2010); Saint Kitts and Nevis, Section 62 (1) of the Patents Act (Cap. 18.25) of 31/12/2002

<sup>28</sup> Colombia, Article 306 of the Criminal Code as last amended on 22/06/2006.

For instance see: Comoros, Article 41 of the Patents Law of 05/07/1844.

For instance see: Democratic Republic of Congo, Article 88 of the Law No. 82-001 of January 7, 1982 on Industrial Property; Djibouti, Article 200 of the Law No. 50/AN/09/6th L on the Protection of Industrial Property of 21/06/2009; Indonesia, Article 130 of the Patents Law No. 14 of 01/08/2001; Morocco, Article 213 of the Law No. 97-17 on the Protection of Industrial Property of 15/02/2000 as last amended by Law No. 31-05; and Netherlands, Article 79 of the Patents Act of 15/12/1994 (Text as it applies on: 03/06/2009).

For instance see: Equatorial Guinea, Article 534 of the Criminal Code of 03/04/1980; Finland, Article 57 of the Patents Act, Act No. 550 of 15/12/1967 as last amended by Act No. 101/2013; Iceland, Article 57 of the Patents Act No. 17/1991 as last amended by Act No. 126/2011; Norway, Section 57 of the Patents Act No. 9 of 15/12/1967, as amended up to Act No. 8 of 01/07/2010; Seychelles, Section 119 of the Industrial Property Act, Act No. 7 of 2014; Switzerland, Article 81 of the Patents Law of 25/06/1954, as of 01/01/2012; and United Republic of Tanzania, Section 70 of Chapter 217, the Patents (Registration) Act of 1995.

France, Article L615-14 of the Intellectual Property Code (consolidated as of January 1, 2014).

lran (Islamic Republic of), Article 61 (1) of the Patent, Industrial Design and Trademark Registration Act of 29/10/2007.

For instance see: Kenya, Article 109 of the Industrial Property Act of 27/07/2001; South Sudan Section 50 of the Patent Law No. 58 of 1971; and Sudan, Section 50 of the Patent Law No. 58 of 1971.

Spain, Article 534 of the Criminal Code.

For instance see: Denmark, Article 57 of the Consolidated Patents Act, Act No. 108 of 24/01/2012; Rwanda, Article 261 of the Law No. 31/2009 of 26/10/2009 on the Protection of Intellectual Property; and Sweden, Article 57 of the Patents Act (1967:837) as last amended on 01/07/2011.

See Article 52 of the Belgian Patent Act, which provides for higher civil remedies in case of bad faith: 
« [...] § 4. Sans préjudice du § 6, la partie lésée a droit à la réparation de tout préjudice qu'elle subit du fait de la contrefaçon. § 5. Lorsque l'étendue du préjudice ne peut être déterminée d'aucune autre manière, le juge peut de manière raisonnable et équitable fixer un montant forfaitaire, à titre de dommages et intérêts. Le juge peut, à titre de dommages et intérêts, ordonner la délivrance à la partie demanderesse des biens contrefaisants, ainsi que, dans les cas appropriés, des matériaux et instruments ayant principalement servi à la création ou à la fabrication de ces biens, et qui sont encore en possession du défendeur. Si la valeur de ces biens, matériaux et instruments dépasse l'étendue du dommage réel, le juge fixe la soulte à payer par le demandeur. En cas de mauvaise foi, le juge peut, à titre de dommages et intérêts, ordonner la cession de tout ou partie du bénéfice réalisé à la suite de l'atteinte, ainsi qu'en reddition de compte à cet égard. Seuls les frais directement liés aux activités de contrefaçon concernées sont portés en déduction pour déterminer le bénéfice à céder. § 6. En cas de mauvaise foi, le juge peut prononcer au profit du demandeur la confiscation des biens contrefaisants, ainsi que, dans les cas appropriés, des matériaux et instruments ayant principalement servi à

22. Committing the infringement on a commercial scale under the laws of certain countries is an element of the crime<sup>39</sup>, whereas in other countries, it constitutes an aggravating circumstance.

# (b) <u>Sanctions</u>

- 23. Sanctions to be applied in cases of patent infringement are usually a pecuniary sanction (fine) or a sanction that restricts the freedom of the person (imprisonment). These sanctions can be combined<sup>40</sup>; mutually exclusive (i.e., applied in the alternative)<sup>41</sup>; or with the first sanction of a fine as a base, and the second sanction of imprisonment applying only upon the existence of aggravating circumstances.<sup>42</sup>
- 24. Among countries, the amount of the sanctions is very diverse. Concerning fines sanctions can range from a relatively low sum of 100 EUR<sup>43</sup> to 100,000 EUR, and even up to 300,000 EUR<sup>44</sup>. Another way of calculating the sanction takes into account the minimum monthly legal salary of the alleged infringer.<sup>45</sup> Concerning imprisonment, the potential terms vary significantly; e.g. between six months to three years<sup>46</sup> to between 5 years to 12 years.<sup>47</sup> Other sanctions might be the publication of the decision<sup>48</sup>, the destruction of the infringing goods<sup>49</sup>, the withdrawal of the infringing goods from the commercial market or obligatory labor.<sup>50</sup>

# (c) Aggravating circumstances

25. Among the circumstances that might increase the amount of the sanction are: the infringement has been committed through a network of communication to the public online; the

[Footnote continued from previous page]

la création ou à la fabrication de ces biens, et qui sont encore en possession du défendeur. Si les biens, matériaux et instruments ne sont plus en possession du défendeur, le juge peut allouer une somme égale au prix reçu pour les biens, matériaux et instruments cédés. La confiscation ainsi prononcée absorbe, à concurrence de la valeur de la confiscation, les dommages et intérêts. « (emphasis added).

For more information about the requirement of willfulness, see Harold A. Borland, "The Affirmative Duty to Exercise Due Care in Willful Patent Infringement Cases: We Still Want It", Houston Business and Tax Law Journal, 2005.

Nicaragua, Article 132 (a) of the Law No. 354 of 21/11/2000, Law on Patents, Utility Models and Industrial Designs as last amended by Law No. 634 of 13/09/2007; and Seychelles, Section 118 (1) of the Industrial Property Act, Act No. 7 of 2014.

For instance see: Angola, Article 68 of the Law No. 3/92 on Industrial Property of 28/02/1992; Argentina, Article 75 of the Law on Patents and Utility Models; and France, Article L615-14 of the Intellectual Property Code.

For instance, Antigua and Barbuda, Armenia, Brazil, Cuba, Czech Republic, Romania adopted this option. See Annexes I to this document.

For instance, in Egypt, the basic sanction is a pecuniary fine, but in case of recidivism, the infringer faces imprisonment for a period up to two years. See Annexes I to this document.

Belgium, Article 8, § 1 of the Law on the Punishment of Counterfeiting and Piracy of Intellectual Property Rights of 05/05/2007 as last amended on 25/02/2011.

France, Article L615-14 of the Intellectual Property Code (consolidated as of January 1, 2014).

In Colombia and the Russian Federation, for instance, this method of calculating the amount of the fine is applied. See Annexes I to this document.

For instance; in Antigua and Barbuda and France, the maximum term is three years; in Argentina, Madagascar, Philippines and Uruguay, the term is from six months up to three years; in Armenia and Sweden, the maximum term is two years; in Cuba and Romania, the term is from six months to two years; in Switzerland and Swaziland, the term is up to one year. See Annexes I to this document.

In Belize, the term is between five and twelve years. See Annexes I to this document.

Germany, Section 142 of the Patent Law as amended on 31/07/2009.

France and Indonesia, for example, provide for this kind of sanction. See Annexes I to this document.

Russian Federation, Article 147 of the Criminal Code No. 63-FZ of 13/06/1996 as last amended on 01/03/2012

infringements concerned products dangerous for health, human or animal security<sup>51</sup>; recidivism<sup>52</sup>; the infringement took place on a commercial scale<sup>53</sup>; or the infringement caused a material gain (for the infringer) or damage (to the title holder)<sup>54</sup>; and when the infringer has a given status.<sup>55</sup>

<sup>51</sup> 

For instance, in France if the infringement has been committed through a network of communication to the public online, or if the infringement concerned products dangerous for health, human or animal security, sanctions are increased to 5 years of imprisonment (instead of 3) and 500,000 EUR (instead of 300,000 EUR). See Annexes I to this document.

<sup>52</sup> For instance, in France, in this situation, sanctions are doubled. See Annexes I to this document.

For instance, in Germany, the imprisonment in this case can extend to five years. See Annexes I to this document.

<sup>54</sup> For instance, in Serbia, "[i]f the offence referred to in paragraph 1 results in material gain or damage in an amount exceeding one million dinars, the offender shall be punished with imprisonment from one to eight years". See Annexes I to this document.

For instance, the fact that the infringement has been committed by an organized criminal group, or if the person concerned was an employee of the owner or licensee of the patent.

# III. MEASURES RELATED TO SECURITY WHICH MIGHT RESULT IN A LIMITATION OF PATENT RIGHTS (SO-CALLED "SECURITY EXCEPTIONS")

## A. INTRODUCTION

- 26. The concept of national sovereignty is at the center of international law; it has been stated that each state is a co-equal sovereign<sup>56</sup> and is the final authority within its territorial limits. In a sense, this concept indicates the independence of a state in its functions to the exclusion of other states.<sup>57</sup> Nevertheless, due to globalization and deeper economic integration, international regulation has increased.<sup>58</sup>
- 27. The linkage between international trade and national security goes back to 1947 with the appearance of the General Agreements on Tariffs and Trade (GATT)<sup>59</sup>. Provisions on patent-related matters relevant to national security are also frequent in bilateral<sup>60</sup>, regional<sup>61</sup> and international agreements.<sup>62</sup>

## B. THE INTERNATIONAL LEGAL FRAMEWORK

- 28. Multilateral agreements on patents pay particular attention to the need to maintain the necessary freedom of contracting states to adopt measures considered appropriate to protect national security interests. Such provisions are found in WIPO administered treaties such as the Patent Cooperation Treaty (PCT), the Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure (Budapest Treaty), the Patent Law Treaty (PLT) and are also found in the TRIPS Agreement.
- 29. Concerning the PCT, Article 27(8) states that nothing in the treaty would limit the freedom of any contracting state to apply "measures deemed necessary for the preservation of its national security"; in addition Rule 22.1(a) of the Regulations under the PCT recognizes that based on prescriptions concerning national security, the receiving Office may be prevented from transmitting the record copy of the international application to the International Bureau. Therefore, under the PCT, an essential flexibility exists for contracting states to adopt provisions that aim to protect national security in their national patent laws; e.g., provisions that allow the patent office, acting as a receiving Office in respect of an international application, to prevent the transmission of the record copy until clearance is given by the competent national body. 63

Royal C. Gardner, "Respecting Sovereignty", Fordham Environmental Law Review, Vol. 8, No. 1, Art. 7 (2011), page 133.

See Islan of Palmas (U.S. v. Neth), Hague Ct. Rep. 2d (Scott) 83, 92.

See for instance David Held "The Changing Structure of International Law: Sovereignty Transformed?"; In: Held, David and McGrew, Anthony, (eds.) The Global Transformations Reader: an Introduction to the Globalization Debate. Polity Press, 2003, Cambridge, UK, page 163.

Article XXI of the GATT and Art. XIV bis of the General Agreement on Trade in Services (GATS).

See in that context the Agreement between the Government of the United States of America and the Government of Turkey to Facilitate Interchange of Patent Rights and Technical Information for Purposes of Defense signed at Ankara on May 18, 1956, or the Agreement between the Government of the United States of America and the Government of Japan to Facilitate Interchange of Patent Rights and Technical Information for Purposes of Defense signed at Tokyo on March 22, 1956.

Agreement on Mutual Preservation of Inter-State Secrets in the Area of Legal Protection of Inventions signed between Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Russian Federation, Tajikistan, Ukraine and Uzbekistan.

See in that context the NATO Agreement for Safeguarding of Secrecy of Inventions Relating to Defense (version 1974).

Since the PCT does not contain a provision for suspending the procedures during the international phase based on national security measures, the international application will be considered withdrawn if the record copy is not transmitted to the International Bureau before the expiration of the applicable time limit (see PCT Article 12(3) and Rule 22.3).

- 30. Concerning other WIPO administered treaties the situation is as follows: on one hand the Budapest Treaty Article 5 provides for restrictions of the export from and import into the territory of a contracting state of microorganisms destined for deposit or deposited under the treaty, due to national security, under certain circumstances, <sup>64</sup> while on the other hand the PLT contains the so-called "security exception" (Article 4) which is drafted in a broad manner: "Nothing in this Treaty and the Regulations shall limit the freedom of a Contracting Party to take any action it deems necessary for the preservation of essential security interest".
- 31. Finally, the TRIPS Agreement Article 73 provides a general exception for matters that are deemed to be essential to national security interests. This Article provides for three grounds of security exceptions; namely, a limitation to the disclosure of information contrary to national essential security interests; the adoption of action considered necessary for the protection of essential security interests; and the adoption of action in pursuance of the Member State obligations under the UN Charter for the maintenance of international peace and security.
- 32. In relation to what can be considered an "essential security interest" some authors state that it is within discretion of each WTO Member State to define what an "essential security interest" is <sup>66</sup>. Therefore, it is suggested that it should not be a ground for WTO dispute settlement understanding (DSU), i.e. the latter is not well placed to decide if the reason for which the Member State adopted a security measure under Article 73 was effectively to meet an "essential security interest". The WTO is not widely perceived as a forum for dealing with these types of disputes<sup>67</sup>, as was the case of GATT 1947.<sup>68</sup>

# C. NATIONAL IMPLEMENTATION

33. In the light of Article 73 of the TRIPS Agreement, Member States have the option whether or not to introduce within their national legislation the so-called "security exceptions". In relation to patent legislation in particular, such measures have taken different aspects: on one hand, security measures related to patent prosecution, and on the other hand measures related to exclusions from patentability and other measures in the field of inventions related to atomic energy.

## (a) Security measures related to patent prosecution

34. In a certain number of countries, the national legislation provides for the possibility to declare a patent application "secret". <sup>69</sup> In general, this means that neither the patent application nor the final patent document is published.

The exceptional character of this provision is highlighted with the following wording "only when the provision is necessary in view of national security".

"Resource Book on TRIPS and Development", UNCTAD-ICTSD Project on IPRs and Sustainable Development, 2005, p.804. See also Kiyoun Sohn and Taek Dong Yeo, "Does the International Trade Help to Enhance National Security?", available at

https://faculty.washington.edu/karyiu/confer/sea05/papers/sohn\_yeo.pdf.

Since the creation of the WTO, no panel has produced a report on national security issues.

Only 4 cases have reached the level of formalized dispute settlements, see "Resource Book on TRIPS and Development", UNCTAD-ICTSD Project on IPRs and Sustainable Development, 2005, page 806.

The terminology, however, shall vary: for example, in the Industrial Property Law of the Former Republic of Macedonia and of Viet Nam utilize the expression "confidential invention" and "confidential patent".

<sup>&</sup>quot;Article 73. Security exceptions. Nothing in this Agreement shall be construed:

(a) to require a Member to furnish any information the disclosure of which it considers contrary to its essential security interests; or (b) to prevent a Member from taking any action which it considers necessary for the protection of its essential security interests; (i) relating to fissionable materials or the materials from which they are derived; (ii) relating to the traffic in arms, ammunition and implements of war and to such traffic in other goods and materials as is carried on directly or indirectly for the purpose of supplying a military establishment; (iii) taken in time of war or other emergency in international relations; or (c) to prevent a Member from taking any action in pursuance of its obligations under the United Nations Charter for the maintenance of international peace and security".

- 35. In some countries, patents laws give the patent office the faculty to keep secret information that relates to national security<sup>70</sup> while in other cases, the patent office passes the patent application to the competent authority to verify if the invention might relate to the national defense or security. The authority in charge of the examination of the "secret" character of the invention may vary from country to country; for instance in Egypt<sup>71</sup>, whether the authority in charge is the Ministry of Defense, the Ministry of Military Production, the Ministry of Interior or the Ministry of Health depends on the subject matter. In the case Albania, Netherlands and New Zealand, the authority competent to classify the invention as a "state secret" is the Ministry of Defence. In the United Kingdom, the authority in charge of considering whether the publication of the application or the publication or communication of the information in question would be prejudicial to national security or the safety of the public is the Secretary of State.
- 36. Taking into account that Member States have the faculty to define what their "essential security interests" are, and which measures may be adopted to protect such interests, the laws and practices are very diverse. Some common features could be groped as follows: indication of inventions that have to be kept secret; requirements to delay/avoid publication of the above-mentioned patent applications; compensation for state use/assignment of the invention; and restrictions on patenting the secret invention in other countries.
- (i) Indication of inventions that have to be kept secret
- 37. The type of inventions<sup>72</sup> that must be kept secret can vary from country to country. In some countries, secret inventions are those that relate to national defense<sup>73</sup>, affect the interests of State defense<sup>74</sup> or relate to defense purposes.<sup>75</sup> The Polish Patent Law, for example, provides a specific definition of inventions concerning national defense and the security of the state<sup>76</sup>, while other countries refer to inventions concerning to safety of the

Section 15 of the Patents Act No. 2 of 2003 of Vanuatu provides that "[i]f it appears to the Registrar that an application (...) contains information that might be prejudicial to: (a) the defense of Vanuatu; or (b) the safety of the public; the Registrar may prohibit or restrict the publication of that information".

Egypt, Article 17 of the Law No. 82 of 2002 establishes that "the patent office shall deliver to the ministry of Defense, the Ministry of Military production, the Ministry of Interior or the Ministry of Health, as necessary, copies of the applications for patents pertaining to defense, military production, or public security or patents of military, security or health value; together with the attachments to such application, within ten days after the date of completion of the examination" and that "the Competent Minister, as the case requires, may oppose, after announcing the acceptance of the patent application, against proceeding with the issuance of the patent, if it appears to the Minister that the application relates to defense, military production or public security affairs; or that the application has military, security or health value".

Additionally, in Russia, a distinction is made between secret inventions for which a patent application has been filed and secret inventions for which a utility model or industrial design application has been presented: in fact Russian legislation on patents acknowledges the possibility only to obtain secret patents, but not secret utility models or secret industrial designs. However, Article 1390 (5) of the Russian Civil Code, Chapter 72 provides that "[i]n the case when, in the process of examination of an application for a utility model the federal executive authority for intellectual property finds that the information contained in it constitutes a state secret, the documents of the application shall be classified as secret by the procedure provided for by the official secrets legislation. In this case the applicant shall be notified of the possibility of withdrawal of the application for a utility model or of conversion into an application for a secret invention".

Are part of this group, for instance, Brazil and China.

For instance see: Latvia, Section 11 of the Patent Law of 15/02/2007.

For instance see: India, Section 35 of the Patents Act of 1970 as last amended by Act no. 15 of 2005.

Article 56 of the Industrial Property Law of 30/06/2000 as last amended by act of 29 June 2007: "1. An invention made by a Polish national may be considered to be a secret invention, if it concerns national defence or the security of the State. 2. The following, in particular, are inventions concerning national defence: new categories of weapons or military equipment and methods of combat. 3. The following, in particular, are inventions concerning the security of the State: technical means applied by civil services authorized to carrying out actions and reconnoitering operations, as well as new categories of equipment and materiel, and methods of use thereof by the said services."

public<sup>77</sup>, inventions in which disclosure might be detrimental to the national security<sup>78</sup> or inventions prejudicial to both national defense and security or safety of the public (for instance, Luxembourg, Montenegro and Kenya) or inventions that are prejudicial to the interest or security of the nation (Malaysia).

- 38. In the same vein, the legislation of some countries refers to inventions related to weapons; for instance, the laws of Bangladesh and Canada refer to inventions concerning improvement in instruments or munitions of war. Similarly, the Patent Law of Denmark refers to "inventions relating to war material and processes for the manufacture of war material".
- 39. A certain number of countries have introduced a more elaborated set of provisions concerning secret inventions: for example, Article 24 of the Patent Law of Bulgaria explains that "secret inventions are inventions which contain classified information representing a state secret within the meaning of Article 25 of the Law on Protection of Classified Information". This latter provision establishes that a "State secret is such information, as listed in Schedule 1, the unauthorized access to which might threaten or prejudice such interests of the Republic of Bulgaria as relate to national security, defense, foreign policy or the protection of the constitutional order" and in that regard, Schedule 1 contains a long and detailed list of what might be considered a secret invention. Some other laws adopt a broader approach: for instance the Law on Industrial Property of the Democratic Republic of Congo specifies that "inventions and discoveries (...) of particular interest for the national interest may be declared secret. They may concern any field, especially that of national defense and security".
- (ii) Requirements to delay/avoid publication of the above mentioned patent applications
- 40. In some jurisdictions<sup>80</sup>, if the patent office deems that an invention relates to defense or national security, the competent authority proceeds to evaluate whether the publication of the patent application might prejudice interests such as national defense. In certain cases, the publication is banned *a priori*<sup>81</sup>. The time during which an invention must be kept secret varies significantly among the laws analyzed, e.g., the law of the United States of America provides that "[a]n invention shall not be ordered kept secret and the publication of an application or the grant of a patent withheld for a period of more than one year. The Commissioner of Patents shall renew the order at the end thereof, or at the end of any renewal period, for additional periods of one year upon notification by the head of the department or the chief officer of the agency who caused the order to be issued that an affirmative determination has been made that the national interest continues to so require".<sup>82</sup>
- (iii) Compensation to the patent applicant due to assignment to the State
- 41. In a certain number of countries, when an invention falls within the category of secret, it has to be assigned to the state.<sup>83</sup> The Patents Act of Norway provides that the "King may, when

For instance see: United States of America, Section 181 of the U.S. Patent Law, 35 U.S.C. (Consolidated Patent Laws as of May 2014).

Schedule No 1 to Article 25 includes a long list of "Categories of Information Classified as a State Secret" (more than 64 items grouped in three categories: I. Information Relating to the Country's Defense; II. Information Relating to The Country's Foreign Policy and Domestic Security and III. Information Relating to the Country's Economic Security).

Section 181 of the U.S. Patent Law, 35 U.S.C. (Consolidated Patent Laws as of May 2014).

For instance see: Brunei Darussalam, Singapore, United Kingdom, among others.

For instance: Australia, Belgium, Brazil, Cuba, and United States of America among others.

For instance see: Vanuatu, Section 15 of the Patents Act No. 2 of 2003.

For instance see: South Africa, Section 78 of the Patents Act, Act No. 57 of 1978, as last amended by Act No. 20 of 2005.

found necessary because of war or danger of war and situations of crisis connected therewith, provide that the right to an invention shall be assigned to the Government or to another party designated by the King".

- 42. In case of the assignment of the invention and the rights thereto to the state, compensation is paid to the patent applicant. The legislation of some countries circumscribes more than other countries the concept of compensation, specifying it should be reasonable<sup>84</sup>, fair<sup>85</sup>, or established in proportion to the market value of the invention.<sup>86</sup> In the Netherlands, the law provides that the state should award compensation for any damage that the patent applicant of a secret invention has sustained as a result of the provisions of law on secret inventions. Similarly, the Patent Law of the United States of America uses the terminology "compensation for the damage caused by the order of secrecy and/or for the use of the invention by the Government" whereas other countries use the term "indemnification". Between the state of the invention by the Government of the invention and the right state of the invention by the Government" of the invention and the right state of the invention and the state of the state of
- 43. In some jurisdictions the exploitation of a secret invention shall be limited, in the sense that the patent holder, before exploiting or assigning the invention, has to inform the government agency in order to obtain its authorization<sup>89</sup>. Similarly, the Bulgarian Patent Law establishes that "[t]he person entitled to use and dispose of a secret patent shall be determined by decision of the Council of Ministers".<sup>90</sup>
- (iv) Restrictions in patenting the secret invention in other countries
- 44. Since secret inventions are subject to a different procedure due to national defense or security, the state patrols the patenting activity of its citizens and residents not only in the territory of the state, but also in foreign countries. This explains why in certain jurisdictions, residents cannot apply for a patent in another country without the express or implicit clearance of the national authority. Usually a period of time is given to the competent authority in order to analyze the patent application and afterward, the patent applicant receives authorization to file abroad. According to the patent law of some Member States, not respecting this rule shall imply an offense and criminal and/or civil sanctions. In countries where secret patents are granted, the titleholder cannot patent abroad or has to ask for permission.

See Republic of Korea, Article 41 of the Patent Act No. 950 of 31/12/1961 as last amended by Act No. 11690 of 2013.

For instance see: Saudi Arabia, Article 49 (2) of the implementing regulations of Law of Patents, Layout-Designs of Integrated Circuits, Plant Varieties, and Industrial Designs of 26/12/2004.

Article 59(2) of the Polish Industrial Property Law of 30/06/2000 as last amended by act of 29 June 2007.

U.S. Patent Law, 35 U.S.C. 183 (Consolidated Patent Laws as of May 2014).

For instance see: Brazil, Italy and France. In the latter, the amount of the "indemnité" is established by the Tribunal de Grande Instance. See Annex I to this document.

For instance see: Brazil, Article 75 of the Industrial Property Law No. 9.279 of 14/05/1996, as last amended by Law No. 10.196 of 14/02/2001.

See Article 24 (8) of the Law on Patents and Utility Model Registration No. 27/2 of 1993 as last amended on 20/07/2007 of Bulgaria.

For instance Singapore, United Kingdom, United States of America, among others.

For instance see: Brazil, Article 75 of the Industrial Property Law No. 9.279 of 14/05/1996, as last amended by Law No. 10.196 of 14/02/2001; Bulgaria, Article 25 of the Law on Patents and Utility Model Registration No. 27/2 of 1993 as last amended on 20/07/2007; Cuba, Article 88 of the Decree-Law No. 290 of November 20, 2011 on Inventions and Industrial Designs and Models.

For instance see: Albania, Article 31 of the Industrial Property Law No. 9977 of 07/07/2008; Denmark, Section 70 of the Consolidated Patents Act No. 108 of 24/01/2012; India, Section 39 of the Patents Act of 1970 as last amended by Act no. 15 of 2005; Kenya, Article 28 of the Industrial Property Act of 27/07/2001; and Pakistan, Section 26 of the Patents Ordinance No. LXI of 2000.

- (b) Measures related to exclusions from patentability and other measures in the field of inventions related to atomic energy
- 45. In a certain number of countries patents on inventions which must be kept secret are not granted. The Patent Law of New Zealand, for instance, provides that if the invention falls, in the opinion of the Commissioner, in one of a class notified to the Commissioner by the Minister of Defence as relevant for defence purposes, no patent must be granted. In the Russian Federation secret inventions will be protectable through patents, but not through utility models finally, it has to be mentioned that Madagascar's patent law excludes from patentability certain categories of invention where required by vital interest, which includes national defense.
- With regard to innovation related to atomic energy, in a certain number of countries, such as India and Sri Lanka, a specific legislation has been adopted, where inventions related to atomic energy<sup>97</sup> are not patentable. In particular, Section 20(i) of the Indian Atomic Energy Act, 1962 establishes that "[a]s from the commencement of this Act, no patents shall be granted for inventions which in the opinion of the Central Government are useful for or relate to the production, control, use or disposal of atomic energy or the prospecting, mining, extraction, production, physical and chemical treatment, fabrication, enrichment, canning or use of any prescribed substance or radioactive substance or the ensuring of safety in atomic energy operations". Similarly the Intellectual Property Act of Sri Lanka provides that an invention that is useful in the utilization of special nuclear material or atomic energy in an atomic weapon shall not be patentable.<sup>98</sup>
- 47. In the United States of America, Section 151 of the Nuclear Regulatory Legislation provides that "a .No patent shall hereafter be granted for any invention or discovery which is useful solely in the utilization of special nuclear material or atomic energy in an atomic weapon" and "b. No patent hereafter granted shall confer any rights with respect to any invention or discovery to the extent that such invention or discovery is used in the utilization of special nuclear material or atomic energy in atomic weapons". Additionally, this provision of law establishes that "[a]ny person who has made or hereafter makes any invention or discovery useful in the production or utilization of special nuclear material or atomic energy, shall file with the Commission a report containing a complete description thereof unless such invention or discovery is described in an application for a patent filed with the Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office (...)".
- 48. Similarly, the Canadian patent law provides that "[a]ny application for a patent for an invention that, in the opinion of the Commissioner, relates to the production, application or use of nuclear energy shall (...) be communicated by the Commissioner to the Canadian Nuclear Safety Commission". 99

[Annexes follow]

<sup>94</sup> Malaysia, Morocco, New Zealand and Poland.

<sup>95</sup> Section 132 of the New Zealand Patents Act No. 68 of 2013.

<sup>96</sup> See Article Articles 1349 (3) of the Civil Code, Chapter 72 of the Russian Federation.

Some legislation on this matter also refers to nuclear energy. The difference resides in the fact that while atomic energy deals with the atom in its entirety, nuclear energy deals only with the nucleus of the atom. "The atom is the smallest identifiable unit of matter. It has a nucleus which contains one or more protons and then one or more electrons orbiting in outer layers. The word nuclear in the phrase 'nuclear bomb' means 'involving or related to atomic nuclei or an atomic nucleus'". See

http://dictionary.reference.com/help/faq/language/d39.html.
Section 62 (3) (e) of the Intellectual Property Act No. 36 of 2003.

<sup>&</sup>lt;sup>99</sup> Section 22 of the Patent Act (R.S.C., 1985, c. P-4), as last amended on 21/09/2006.