Bogotá, February 14th, 2020

Secretariat

World Intellectual Property Organization WIPO

Ref.: Comments on IP policy and AI by Eliana Andrea Portilla Mogollón, Colombian lawyer, LL.M in IP and ICT, KU Leuven, researcher on patentability, inventorship and ownership of inventions generated by AI without human technical contribution.

Dear Sirs,

Please allow me to submit my comments with relation to the issues arising for IP Policy in relation to Artificial Intelligence, specifically regarding the section of patents.

Please find my comments under each question below:

PATENTS

Issue 1: Inventorship and Ownership

1. In most cases, AI is a tool that assists inventors in the invention process or constitutes a feature of an invention. In these respects, AI does not differ radically from other computer- assisted inventions. However, it would now seem clear that inventions can be autonomously generated by AI, and there are several reported cases of applications for patent protection in which the applicant has named an AI application as the inventor.

2. In the case of inventions autonomously generated by AI:

   (i) Should the law permit or require that the AI application be named as the inventor or should it be required that a human being be named as the inventor? In the event that a human inventor is required to be named, should the law give indications of the way in which the human inventor should be determined, or should this decision be left to private arrangements, such as corporate policy, with the possibility of judicial review by appeal in accordance with existing laws concerning disputes over inventorship?

   Comments: Laws respond or should respond to the social realities of the time when they are written. It is therefore hardly logical that the rules of patent law, which were drafted decades ago, allow only humans to have the status of inventors. Until just a few decades ago, it was unthinkable that non-human entities could do anything remotely intelligent, much less that they would be capable of creating inventions on their own. However, technology has drastically changed our social reality and today it is a fact that AI can create inventions autonomously. Patent law must be adjusted to respond adequately to these new realities. To this effect, I believe that the law should allow AI to be named as the inventor or co-inventor if

that is the case. More than allowing is recognizing a de facto situation. With such recognition, AI will not be encouraged to continue creating new inventions, nor can it be said that recognizing AI as an inventor is fair because nothing is fair or unfair to a machine, but two important things would be achieved: 1) Preserving the historical truth of the invention, that is, making public the true origin of the invention, and 2) Removing the first legal obstacle to achieving patentability of AI-generated inventions.

In case legislators are reluctant to recognize AI as the inventor, at least one human should be designated as inventor to ensure that the invention is not left unprotected. This option runs against the principle of transparency as it would grant inventorship to those who do not deserve it; however, it would be less critical than leaving inventions outside the scope of protection of the Patent System since humans who recognize the creation as an "invention" would be tempted to: (i) protect the inventions through industrial secrecy, which means that society would not obtain the technical information resulting from the disclosure or (ii) to lie about the true origin of the invention.

If the law maintains the rule requiring the mention of one or more humans as inventors, the law should give clear indications on how to determine which humans should be credited with the inventorship status of AI-generated inventions. Otherwise, this could become in chaos between all the persons that somehow intervened, witnessed or recognized the creation as invention.

(ii) The inventorship issue also raises the question of who should be recorded as the owner of a patent involving an AI application. Do specific legal provisions need to be introduced to govern the ownership of autonomously generated AI inventions, or should ownership follow from inventorship and any relevant private arrangements, such as corporate policy, concerning attribution of inventorship and ownership?

Comments: In cases where the AI is the inventor of the creation, the inventorship should not be the starting point to determine the ownership. Therefore, the law should establish the applicable criteria in order to designate the owner of the invention. In principle, one could think that the owner of the autonomous AI should be also the owner of the creations generated by said AI. Here the question would be, what happens if the patent over the autonomous AI already expired? In other words, what would happen if the autonomous AI (inventor seen as invention) is already in the public domain? Should be the user of the AI the one with the right to own the invention? Nevertheless, I consider that irrespective of the chosen criteria to designate the ownership of the invention, the AI should not be the owner of its own creation. There is no practical benefit in crediting AI with ownership status.

(iii) Should the law exclude from the availability of patent protection any invention that has been generated autonomously by an AI application? See also Issue 2, below.

Comments: No. the AI-generated inventions should not be included in the categories of the mater excluded from patentability.

It is no secret that people will do their best to obtain the right of exclusive exploitation of the inventions over which they consider they have a right. For this reason, if inventions generated by AI were excluded from the protection of the Patent System, people would either be listed as inventors of inventions they did not create or would be protected by the industrial secret, thus preventing the society from benefiting from the disclosure resulting from the invention's disclosure.

Issue 2: Patentable Subject Matter and Patentability Guidelines

3. Computer-assisted inventions and their treatment under patent laws have been the subject of lengthy discussions in many countries around the world. In the case of AI-generated or -assisted inventions:

(i) Should the law exclude from patent eligibility inventions that are autonomously generated by an AI application? See also Issue 1(iii), above.

Comments: No. The Patent System is the appropriate system for protecting inventions in all areas of technology and should be adapted to cover AI-generated inventions. In fact, it is fully feasible that a process or product generated by AI meets the standards of patentability, so the real drawback in its protection through a patent is that it has not been created by a human. The problem is not the object of protection but the creator, which indicates that the system does not have to be fundamentally changed to protect these inventions, but only adapted to this technology.

(ii) Should specific provisions be introduced for inventions assisted by AI or should such inventions be treated in the same way as other computer-assisted inventions?

Comments: The introduction of specific rules with respect to AI-assisted inventions is not required. AI are algorithms implemented mainly through software, so, in general terms, the same criteria could be applied as to computer assisted inventions; however, the difference should be given more in the assessment of the inventive step requirement regarding inventions generated by AI. The use of AI as a sophisticated tool in the inventive process represents clear advantages for human inventors, resulting in a reduction of time and human effort. For that reason, as the EPO once said, the greater the use of an AI tool in the relevant technological area, the less inventive the result will be in the eyes of patent examiners and in that sense, the AI-assisted inventions must be studied in a more strict way than computer-assisted inventions that use technology other than AI.

(iii) Do amendments need to be introduced in patent examination guidelines for AI- assisted inventions? If so, please identify which parts or provisions of patent examination guidelines need to be reviewed.

Comments: Yes, amendments need to be introduced in patent examination guidelines, specifically regarding the inventive step assignment. The examiners should raise the threshold when assessing the inventiveness of inventions generated or assisted by AI. So, the level of skills of the person skilled in the art used as benchmark should be higher when the examined invention was generated by AI or created with the assistance of AI. As a matter of fact, the person skilled in

the art should not be framed in human terms but in an analogous AI when assessing the inventive step; otherwise there is no way to guarantee that an invention that was not obvious for a human was also not obvious for an AI machine.

Issue 3: Inventive Step or Non-Obviousness

4. A condition of patentability is that the invention involves an inventive step or be non-obvious. The standard applied for assessing non-obviousness is whether the invention would be obvious to a person skilled in the relevant art to which the invention belongs.

(i) In the context of AI inventions, what art does the standard refer to? Should the art be the field of technology of the product or service that emerges as the invention from the AI application?

Comments: “the art” refers to the technological area of the product or process invented by the AI.

(ii) Should the standard of a person skilled in the art be maintained where the invention is autonomously generated by an AI application or should consideration be given to replacing the person by an algorithm trained with data from a designated field of art?

Comments: In order to be equitable, the person skilled in the art should be an AI machine when the invention was generated by AI. Likewise, the person skilled in the art should be a human when the invention was created by a human and should be a human with access to the most sophisticated technological tools when the invention was created with the assistance of AI.

(iii) What implications will having an AI replacing a person skilled in the art have on the determination of the prior art base?

Comments: The person skilled in the art framed in human terms is presumed to be a skilled person in the particular technological field, aware of the common general knowledge, with access to all the information in the state of art and is presumed to have at his/her disposal the tools that are normally used in routine work and experimentation. Nevertheless, although this hypothetical human is presumed to have access to all information, the truth is that humans have limitations. Therefore, the examiner, who is assessing the obviousness of the invention through the lens of a human person skilled in the art, might overlook some important documents despite doing his/her best to do a comprehensive search on the state of the art.

In this sense, if an AI algorithm were used as a reference point for the study of the inventiveness, the probabilities of obtaining better and faster results in the search for information throughout prior art would be greater as the AI would not have the human limitations.

(iv) Should AI-generated content qualify as prior art?

Comments: AI-generated content should be treated in the same way as any other type of information, so that if such information was disclosed in any way it will be

part of the state of the art. However, if the AI-generated content consists of an invention and protection of that invention is sought through the Patent System, it should be protected in the same way that the Patent System protects any technical information contained in the patent application.

Issue 5: General Policy Considerations for the Patent System

5. A fundamental objective of the patent system is to encourage the investment of human and financial resources and the taking of risk in generating inventions that may contribute positively to the welfare of society. As such, the patent system is a fundamental component of innovation policy more generally. Does the advent of inventions autonomously generated by AI applications call for a re-assessment of the relevance of the patent incentive to AI-generated inventions. Specifically,

(i) Should consideration be given to a sui generis system of IP rights for AI-generated inventions in order to adjust innovation incentives for AI?

Comments: There is no need to create a sui generis system of IP rights specifically for AI-generated inventions. The patent system could be adjusted to take account of new technological realities. What regulators should do is to define the criteria for establishing ownership over AI-generated inventions with a view to encouraging the creation of more autonomous artificial intelligence, the disclosure of technical information and the preservation of historical truth.

(ii) Is it too early to consider these questions because the impact of AI on both science and technology is still unfolding at a rapid rate and there is, at this stage, insufficient understanding of that impact or of what policy measures, if any, might be appropriate in the circumstances?

Comments: No. It is not too early to start thinking about these kinds of questions. Although it has been thought that the level of AI capable of generating inventions autonomously is the intelligence known as General AI (not yet achieved), it is a fact that the Narrow AI (which has already been achieved) has already managed to create inventions without the technical contribution of at least one human. In this sense, the laws must be prepared to give a timely response to this type of technology. Technologies usually arrive unannounced and take regulators by surprise, but in this case, it seems that legislators are being given the opportunity to prepare before AI has the capacity to create inventions autonomously in a massive way. Patent laws will certainly have to be adapted as they go along, but it is important to start taking the first steps, and this kind of open consultations are an excellent way to proactively approach the technological revolution that is beginning.

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