
From: cslee
Sent: Wednesday, 22 January 2020 9:54 AM
To: ai2ip
Cc: 'CS Lee'
Subject: RE: Invitation to Participate in Public Consultation on Artificial Intelligence and Intellectual Property Policy

Dear Ulrike Till,

Thanks for your kind invitation on the AI policy.

- Do you agree with the issues raised in the [draft issues paper](#)?

<Answer> I agree with the with the issues raised in the draft issues paper.

- Do you consider there are other areas related to AI that need to be considered in IP policy?

<Answer> No, I don't, I am considering the patent area, however my considering sometimes could expand to other legal issues, as like Constitution, Fundamental rights.

- What are the open questions for IP in the AI field for you?

<Answer> I have some questions for patent in the AI filed as follows; as well as the issues in the draft issues paper, I will send my open question and some comments ASAP through the linked "Have your say".

A. Why should we include "AI-autonomously generated Invention" in Human's patent system?

Basically, the purpose of the patent system is to encourage the development of new inventions, and in particular to encourage the disclosure of those new inventions. Inventors are often hesitant to reveal the details of their invention, for fear that someone else might copy it. This leads to keeping inventions secret, which impedes innovation. A government grant inventors the legal right to exclude others from making, using, selling and importing an invention for a limited period of years, in exchange for publishing an enabling public disclosure of the invention. It provides a remedy for this fear, and so acts as an incentive to disclose the details of the invention.

How about "AI-autonomously generated Inventions" and "AI-assisted Inventions"? They just need a big data, don't they? And They needs more data, information, other modeling (algorithm), not other's inventions. Where doses their innovation come from?

B. If we protect AI related Invention within patent system, ...

✓ **Different approach between "AI-autonomously generated Invention" and "AI-assisted Invention"**

1) How can we say the definition of "AI-autonomously generated Invention" and "AI-assisted Invention" differently to distinguish them ?

2) I wonder how much human beings should contribute to the invention to say "AI-assisted Invention".

3) How can an examiner or a judge find out whether an applicant's invention is "AI-autonomously generated Invention" or "AI-assisted Invention" ?

(In the recent AI-invented patent case (EP3564144, EP3563896), the applicant said frankly that the invention made by AI. and I had a question on whether the inventions would satisfy the enablement and disclosing requirement or not when reading the specification.)

4) Is it proper to apply the same standards to the "AI-autonomously generated Invention" or "AI-assisted Invention" as those of human inventors when we considering Inventive step (non-obviousness) ?

C. Inventorship or Ownership ?

1) Could we admit legal personality of AI program? Could the AI program be the subject of rights and duties ?

2) I wonder whether AI's Invention would be the result of the using AI program as a tool or AI's creative activities ?

3) If AI's invention is the result of the using AI program, Should we treat patent of AI program as a method patent of manufacture or just simple method patent of use ?

(As you know, the method claim of manufacture patent could cover a result of manufacture)

4) If a developer of AI's program own the patent of AI program, a legitimate user ,as like a licensee, can use AI program to invent an "AI-autonomously generated Invention" or "AI-assisted Invention". And the owner of AI program can't assert the infringement of the AI program patent and the ownership of "AI-autonomously generated Invention" or "AI-assisted Invention" when we considering "exhaustion theory".

I wrote down whatever came to my mind. As soon as I organize my thoughts, I will reply to you.

Best regards,

Chinsu

CS Lee (Chinsu Lee)

Chief Patent Officer

Senior VicePresident (Patent Attorney)

IP Div. HUROM CO., Ltd.

Personal Comments on DRAFT ISSUES PAPER ON INTELLECTUAL PROPERTY POLICY AND ARTIFICIAL INTELLIGENCE

prepared by CHINSU LEE (CS LEE)¹

I directly comment on the draft issue paper using the box.

MYSELF INTRODUCTION

Chinsu Lee (CS Lee) currently serves as the Chief Patent Officer at HUROM Co, Ltd, a global manufacture of kitchen appliances, and an adjunct professor at Dongguk University.

He is also a registered Patent Attorney in Korea. Previously, Mr. Lee held the position of General Counsel at Seoul Semiconductor Co, Ltd, a global LED manufacturer, where he led various global litigation asserting patent infringement. Mr. Lee also served as in-house counsel at Samsung Electronics, primarily in its IP licensing group. Prior to that, Mr. Lee was IP Counsel at DR & AJU LLC, a law firm ranked seventh in Korea. Mr. Lee has achieved an unprecedented undefeated record in patent litigation, which has added to his reputation in Korea for excelling in IP legal disputes. Mr. Lee also currently serves as one of the panelists of the IDRC (Internet Address Dispute Resolution Committee).

COMMENTS

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**:

¹ CS Lee (Chinsu Lee), Patent Attorney

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- (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?
- (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?
- (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#1-1

Many countries confuse the concepts of the ownership and the inventorship. Also, the approach to inventorship and ownership has varied from country to country, which would be more critical issue at an international joint invention under an international collaboration situation. Theoretically, the lack of inventorship makes the patent be invalid under the patent law and the lack of ownership makes dispute of ownership under the civil law.

It would be theoretically very important that most of countries identify the inventor of a given invention. In practice, however the countries under the first-to-file principle never investigates whether the proposed inventor is indeed the true inventor since "the right to a patent belong to the inventor or his successor in title. And inventorship is traditionally not classified as a patentability criterion under European patent law, in contrast with U.S. patent law (however, inventorship can be relevant to patentability in Europe, although in only a limited way), however ownership at an early first filed stage is classified as a patentability criterion in Korea and Japan under the first-to-file principle.

Regarding an ownership of IP, I think that we may get a hint from an approach of IP created by employees belongs to the organization if we delicately define the distinction between inventorship and ownership and the effect of the lack of them.

COMMENTS#1-2 Inventorship of AI

When AI autonomously generate an invention, we can't define whether it was used as a tool or it create the invention actively by its own will at the present legal system.

*And I wonder whether AI's Invention would be the result of the using AI program as a tool or AI's creative activities? And **If AI's invention is the result of the using AI program, Should we treat patent of AI program as a method patent of manufacture or just simple method patent of use? (as you know, the method claim of manufacture patent could cover a result of manufacture)***

*If a developer of AI's program own the patent of AI program, a legitimate user, as like a licensee, can use AI program to invent an "AI-autonomously generated Invention" or "AI-assisted Invention". And **the owner of AI program can't assert the infringement of the AI program patent and the ownership of "AI-autonomously generated Invention" or "AI-assisted Invention" when we considering "exhaustion theory".***

Even we can admit an inventorship of AI, the present law require the name of inventor considering the inventorship, however AI program has no legal real name. therefore there need a rule of AI's invention. And whether the law will permit rights to a patent belong to the AI is directly related to the question "Could we admit legal personality of AI program? Could the AI program be the subject of rights and duties?"

COMMENTS#1-3 distinction between "AI-autonomously generated Invention" and "AI-assisted Invention"

*If we protect AI related Invention within patent system, I think that we need a different approach between "AI-autonomously generated Invention" and "AI-assisted Invention". One invention has a room for a person to intervene in the invention activities, but the other has no chance to do so. **however we don't know how we can find the difference as a result between "AI-autonomously generated Invention" and "AI-assisted Invention" differently.***

And I wonder how much human beings should contribute to the invention to say "AI-assisted Invention", and how can an examiner or a judge find out whether an applicant's invention is "AI-autonomously generated Invention" or "AI-assisted Invention"? (In the recent AI-invented patent case (EP3564144, EP3563896), the applicant said frankly that the invention made by AI. and I had a question on whether the inventions would satisfy the enablement and disclosing requirement or not when reading the specification.)

Is it proper to apply the same standards to the "AI-autonomously generated Invention" or "AI-assisted Invention" as those of human inventors when we considering Inventive step (non-obviousness)?

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.
- (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?
- (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#2-1

In order to get an answer on the issue 2, we must solve this question first, "Why should we include AI-autonomously generated Invention in Human's patent system?"

Basically, the purpose of the patent system is to encourage the development of new inventions, and in particular to encourage the disclosure of those new inventions. Inventors are often hesitant to reveal the details of their invention, for fear that someone else might copy it. This leads to keeping inventions secret, which impedes innovation. A

government grant inventors the legal right to exclude others from making, using, selling and importing an invention for a limited period of years, in exchange for publishing an enabling public disclosure of the invention. It provides a remedy for this fear, and so acts as an incentive to disclose the details of the invention.

How about "AI-autonomously generated Inventions" and "AI-assisted Inventions"? They just need a big data, don't they? And They needs more data, information, other modeling (algorithm), not other's inventions. Where doses their innovation come from?

COMMENTS#2-2

When we apply an enablement requirement and disclosure requirement to AI's invention, It is also questionable from whose point of view the criteria should be applied. AI's point of view?

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?
- (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?
- (iii) What implications will **having an AI replacing a person skilled in the art** have on the determination of the prior art base?
- (iv) Should AI-generated content qualify as prior art?

COMMENTS# 3 distinction between "AI-autonomously generated Invention" and "AI-assisted Invention"

Is it proper to apply the same standards to the "AI-autonomously generated Invention" or "AI-assisted Invention" as those of human inventors when we considering Inventive step (non-obviousness)?

Issue 4: Disclosure

5. **A fundamental goal of the patent system is to disclose technology** so that, in the course of time, the public domain may be enriched and a systematic record of humanity's technology is available and accessible. **Patent laws require that the disclosure of an invention be sufficient to enable a person skilled in the relevant art to reproduce the invention.**

- (i) What are the issues that AI-assisted or AI-generated inventions present for the disclosure requirement?
- (ii) In the case of machine learning, where the algorithm changes over time with access to data, is the disclosure of the initial algorithm sufficient?
- (iii) Would a system of deposit for algorithms, similar to the deposit of microorganisms, be useful?
- (iv) How should data used to train an algorithm be treated for the purposes of disclosure? Should the data used to train an algorithm be disclosed or described in the patent application?
- (v) Should the human expertise used to select data and to train the algorithm be required to be disclosed?

COMMENTS# 4-1

When we apply an enablement requirement and disclosure requirement to AI's invention, It is also questionable from whose point of view the criteria should be applied. AI's point of view?

In the recent AI-invented patent case (EP3564144, EP3563896), I had a question on whether the inventions would satisfy the enablement and disclosing requirement or not when reading the specification

COMMENTS #4-2

I think that these question should be limited in the AI-assisted or AI-generated inventions.

If we expand AI program invention, it would more complicated because we have to handle the patent eligibility of program, BM, and algorithm.

Issue 7: Infringement and Exceptions

6. An AI application can produce creative works by learning from data with AI techniques such as machine learning. The data used for training the AI application may represent creative works that are subject to copyright (see also Issue 10). A number of issues arise in this regard, specifically,

- (i) Should the use of the data subsisting in copyright works without authorization for machine learning constitute an infringement of copyright? If not, should an explicit exception be made under copyright law or other relevant laws for the use of such data to train AI applications?
- (ii) If the use of the data subsisting in copyright works without authorization for machine learning is considered to constitute an infringement of copyright, what would be the impact on the development of AI and on the free flow of data to improve innovation in AI?
- (iii) If the use of the data subsisting in copyright works without authorization for machine learning is considered to constitute an infringement of copyright, should an exception be made for at least certain acts for limited purposes, such as the use in non-commercial user-generated works or the use for research?

- (iv) If the use of the data subsisting of copyright works without authorization for machine learning is considered to constitute an infringement of copyright, how would existing exceptions for text and data mining interact with such infringement?
- (v) Would any policy intervention be necessary to facilitate licensing if the unauthorized use of data subsisting in copyright works for machine learning were to be considered an infringement of copyright?
- (vi) How would the unauthorized use of data subsisting in copyright works for machine learning be detected and enforced, in particular when a large number of copyright works are created by AI?

COMMENTS# 7

*I wonder whether AI's Invention would be the result of the using AI program as a tool or AI's creative activities? And **If AI's invention is the result of the using AI program, Should we treat patent of AI program as a method patent of manufacture or just simple method patent of use? (as you know, the method claim of manufacture patent could cover a result of manufacture)***

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