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**RESPONSE TO OPEN CONSULTATION PUBLISHED 29 OCTOBER 2021
ARTIFICIAL INTELLIGENCE AND INTELLECTUAL PROPERTY:
COPYRIGHT AND PATENTS**

6 January 2022

Our ref: RJ/LT/N35111-MI2
Your ref:

Dear Sir/Madam,

**Response to Open Consultation Published 29 October 2021
Artificial Intelligence and Intellectual Property: Copyright and Patents**

We are a firm of British and European patent attorneys and I personally have been involved in the DABUS cases in the UK [*Thaler v Comptroller General of Patents, Trade Marks and Designs*], in Europe and in other countries.

While the DABUS cases have highlighted a number of issues relating to AI generated inventions, specifically the issues of inventorship and ownership, we very much welcome as patent attorneys the much broader remit of the Government's Open Consultation.

This response focuses primarily on the issue of patents and patent law although we do make observations in respect of copyright.



PATENTS

General Remarks

Disincentive to Industry

The IPO is correct in highlighting that if AI devised inventions are unable to be patented, this is likely to result in less investment in AI technology, to the detriment of all industries in the United Kingdom that use or wish to use AI.

In the first Open Consultation, a number of respondents already indicated experiencing difficulties, when relying on AI in the development of new technologies, in identifying a human inventor for the simple reason that in some developments the resultant invention could not be attributed to any particular person or group of people.

The question of inventorship ultimately resides with what the invention is, typically defined by the claims of a patent or patent application. If the subject matter of the claims, for instance a new bioactive molecule, cannot be said to have been devised by a natural person because it was devised by an AI system, that inevitably causes issues with attributing that invention to a natural person.

Holding any AI generated inventions as trade secrets is problematic and not the solution. While some inventions could be protected as a trade secret, many cannot if they are to be commercialised. Additionally, as the IPO correctly identifies in the Open Consultation, keeping technical innovation secret harms follow-on innovation.

Expressed Concerns as to Proliferation of Patenting

The Open Consultation also identifies a concern expressed in some quarters that allowing the patenting of inventions generated by AI might result in a proliferation of patents which could have a detrimental effect on innovation and competition. It has been suggested that advances in AI could reduce innovation costs, resulting in large volumes of patents, which could be held by a small number of dominant players with access to the best AI technology and trading data.

In our view such concerns are misplaced. The current patent system already enables the generation of patent thickets without the involvement of AI. This can be seen, for example, in the attempts of the EPO in recent years to limit the filing of series of divisional patent applications, first by imposing a two-year deadline from the first office action on the first application in the family for the filing of any divisional (now abandoned) and then by imposing increased official fees for subsequent divisional applications. The EPO rolled back from more restrictive provisions for filing divisional applications because they were unnecessary.

In our view, concerns as to the creation of large volumes of patents presuppose that an AI could be used to generate relevant inventions, that is inventions of interest to competitors. There is, however, no guarantee that two AI systems (or even the same AI system carrying out the same task a second time) would generate the same solution to a given technical problem. As a consequence, in our view the potential risk is likely to be overstated.

Even if it were to be the case that an AI system could generate a proliferation of disruptive technical solutions, the generation of patentable ideas does not in itself result in large volumes of patents or even enforceable patents.

First, there is the significant effort and expense required to prepare and file patent applications, which are likely to be speculative and potentially unrewarding.

Secondly, patent applications must be examined before any patent is granted. Any proliferation in filing will inevitably lead to bottlenecks at Patent Offices and delays in the grant of patents. In our view this is bound to reduce significantly the value of any such speculative patent applications. Already, the time taken for patents to be granted in a number of Patent Offices is very significant. Added to this is the time expended on any post grant oppositions, such as at the European Patent Office, which often eats away at a very significant proportion of the term of a patent.

Thirdly, even once patents have been granted, any assertion of those patents must be via the Courts, which would inevitably create yet further potential bottlenecks.

Even if it were realistically possible to generate a proliferation of patentable ideas and patents with the best AI technology and training data, it could be expected that Patent Offices may in any event enact internal controls to prevent this. An example of this is the principle developed by the European Patent Office of “feasibility” of a disclosed invention, which came about from a proliferation of biochemical patent applications some years ago. Furthermore, competition laws could very well play a significant part in controlling any aggressive patenting of this nature by a small number of dominant players with access to the best AI technology and training data. Competition laws already have safeguards in place, which could be expected to develop over time.

The concern as to potential proliferation of patents and patentable inventions is also based upon a presumption that a small number of dominant players would have a significant technical advantage. This is not necessarily the case and we submit there is no reason to assume that a smaller player having access to AI cannot equally generate useful new patentable technologies and that company size may actually play a less significant role than is currently the case.

Moreover, whether or not the patent system were to grant patents for AI-generated inventions is likely to be immaterial with regard to the commercial effect of any proliferation of

patentable ideas generated by any player with access to AI technology. Even if the patent system were to refuse to grant patents for AI-generated inventions, that in itself would not stop, for example, a dominant player with access to the best AI technology and training data from frustrating the commercial activities of a smaller competitor. The dominant player would still be able, for instance, to publish large volumes of innovative concepts developed by their AI technology to prevent competitors from obtaining patents for themselves and as a consequence benefitting from the commercial advantages provided by the patent system. This could undermine the competitor's ability to make a reasonable return on any investments in the generation of new technology and as a consequence undermine the aim of the patent system in any event.

Inventorship

The Open Consultation states that UK applicants must name a human inventor or inventors and that this was confirmed by the Court of Appeal in the DABUS cases (*Thaler v Comptroller General of Patents, Trade Marks and Designs* [2021] EWCA Civ 1374; hereinafter referred to as *Thaler CA*). In our opinion, the Court of Appeal did not come to any such conclusion. With reference to paragraphs 45-47 of the Court of Appeal judgement, it was confirmed that applicants would no longer be required by law to name the inventor, they would simply be required to state who they believe the inventor to be. Paragraphs 58-60 of the judgement confirm that the Banks Committee expressly contemplated cases in which the inventor might not be identifiable as being acceptable, and that this is consistent with section 13(2)(a) of the Patents Act 1977 (hereinafter the Act).

Arnold LJ, at paragraph 147 of the judgment, did not contradict the findings of Birss LJ at paragraphs 45-60, nor did Lady Justice Laing (at paragraph 105 of the judgement). The issue, according to Arnold LJ and Lang LJ in connection with the DABUS cases, was that the applicant positively asserted that the inventor was an AI system. In our view, the judgement in *Thaler CA* would permit an applicant not to name a person as inventor while being quiet as to the invention having been made by an AI system.

Ownership of AI-generated Inventions

The remark in the Open Consultation that in *Thaler CA* the Court of Appeal held, by a majority decision, that the applicant was not able to show any rule law that would give him the ownership of any patent for the DABUS inventions leads to an undesirable and problematic position in the United Kingdom with respect to AI-generated inventions. If the Court of Appeal judgement is ultimately held to set out the definitive state of current law and the law is not changed, this will have serious disadvantageous implications on any AI-generated inventions in the United Kingdom, as being not capable of ownership by anyone. This would act as a serious and concerning disincentive to industry in the United Kingdom.

Open Consultation Policy Options

Option 1: Make No Legal Change

For the reasons stated above, if the judgement in *Thaler CA* becomes the definitive ruling on current patent law, this must not be left as is. Lack of ownership of AI-generated inventions will act as a serious disincentive to invest in AI in the United Kingdom.

Secondly, the inability to obtain patents for AI-generated inventions, both where the AI is the sole deviser of the invention and in cases where the AI is a joint deviser with one or more human co-inventors, can be expected to be a serious disincentive to businesses and industries that rely on or wish to rely on AI to develop new technologies.

In our view, leaving things as they stand is not a reasonable option.

Option 2: “Inventor” expanded to include humans responsible for an AI system which devises inventions

As set out in the Banks Committee Report [Cmnd 4407] and in *Thaler CA*, as confirmed by Lord Hoffman in *Yeda Research and Development Company Ltd v Rhone-Poulenc Rorer International Holdings Inc. and Another* [2007] UKHL 43 (hereinafter *Yeda*), UK patent law changed in 1977 to acknowledge the importance of the actual (true) deviser of the invention, rather than a deemed or pretend deviser of the invention. This has been a very important change in our laws underlining the principles of inventorship and derivation of title to those inventions. It is also consistent, for example, with the EPC, which contemplates only the designation of the true inventor. This was a firm policy in the development of EPC, as set out in the *Travaux Préparatoires* at IV/4860/61-F (page 18):

“Le Président explique que l’Office européen n’examinera pas si se c’est le véritable inventeur qui est désigné. Il importe seulement qu’un inventeur soit désigné; le véritable inventeur fera valoir ses droits auprès des tribunaux nationaux.”

And:

“M. van Benthem répond que, dans ce cas, le service des demandes devrait déterminer quel est le vrai inventeur.”

It would be a regressive step, in our view, were the law to be amended to allow the designation of a deemed or pretend inventor when no human qualifies as actual deviser of the invention, for instance by designating the “human that made the arrangements necessary for the AI to devise the invention”. This would enable any person with no true connection with the invention and no true claim to inventorship to be named as an inventor. This in our view

would undermine the advances made by the 1977 Act. It would also not resolve the issues of *Thaler CA* in relation to the issue of ownership. Ownership in the rights to an invention derive solely from the actual deviser of the invention. Allowing a deemed inventor to be named in place of an AI system when that person is not an actual deviser of the invention will not resolve the entitlement question. A human who does not qualify as an inventor cannot satisfy the requirements of the Act in its current wording. Were the Act to be amended to provide for a “deemed” or “pretend” inventor (in the words of Lord Hoffmann in *Yeda*), this could not only create significant difficulties with the remainder of the Act in its current form but would also be incompatible with the laws in many other countries, including for example in the United States, where it is an offence to wrongly name oneself as an inventor (18 U.S.C. 1001). The principle that inventorship must derive from the actual creation of the invention is one that we should protect.

Allowing a person to be deemed an invention when they have not actually devised the invention would also devalue the very meaning of the principle of inventorship as it has applied consistently since the Act. There is no justification, in our view, in allowing someone who may just switch on an AI system, for example, to accorded the same status as a person who has actually devised a new invention. Why should the two be considered equal?

The Open Consultation also suggests difficulties with identifying who might be the “person by whom the arrangements necessary for the deviser with the invention”. It could be the user, programmer of the AI, the person who configures the AI, the person who selects input data or recognises the output of the AI. We agree. It could potentially be any or all of these people. With potentially no reason why one should be selected over the other.

We disagree that a change to the law along the lines suggested by Option 1 would result in no change to the current approach used by the courts to identify the “actual deviser”. The actual deviser of an invention is determined by the facts of a case and specifically by reference to the invention disclosed and protected in the patent application or patent. It is a principle that is set out in the Act and in recent case law and we submit it would be wrong to roll back from the current position on inventorship.

Any change in the law along these lines would need, in our view, to ensure that there is a clear indication that any “deemed” inventor is just that and that there is a clear and unambiguous indication that the inventive advance was generated by an AI system.

Option 2: Allow patent applications to identify AI as inventor

The Open Consultation suggests two different ways of achieving this, the first to amend legislation to allow AI to be named as the inventor, which we support for the reasons given below, the second to amend legislation to remove the requirement to name an inventor if the invention is devised by AI. As we have explained above, in our view the law already allows the latter and that this was confirmed not only in the Banks Committee Report (Cmnd 4407)

but also in *Thaler CA*. This would address the issues with identifying the actual deviser of the invention. It would not, however, address the issue of ownership of an AI-generated invention as held in *Thaler CA*. The issue of ownership could be addressed without any amendment of the Act being required in light of the provisions of section 7(2)(b) of the Act, namely by an “enactment or rule of law.... that would confer to the person or persons the right to the whole of the property in the invention in the United Kingdom”. While *Thaler CA*, by a split decision, found that there is no such existing rule of law, a rule of law could be established by a separate statute, for example, and as a consequence leave this provision in the Act unamended.

The Open Consultation suggests that any change to UK patent law to provide for the identification of an AI system as an inventor in a UK patent could have adverse consequences in other markets which only recognise human inventors, and that this could discourage applicants from identifying AI as inventor on a UK patent if this might put patent family equivalents at risk of legal challenge. We submit that the position as it currently stands already creates such consequences.

Notwithstanding the above, we submit it would be wrong to avoid any change in UK law to bring it up to date with new technologies, in this case to accommodate AI-generated inventions, simply because it might turn out to be a most modern piece of legislation compared to other countries. The Copyright, Designs and Patents Act 1988 was a remarkable piece of forward-thinking legislation that made very significant changes to IP law. It was initiated in the United Kingdom, before other countries changed their laws, and then spread across the world.

The UK has been instrumental in the development of new IP laws for decades. In our view there is no reason for the UK to be held-back in the case of AI-generated inventions. A number of other countries are already looking at changes in the law and potentially also to allow the granting of patents for inventions created by an AI system (South Africa, Australia, Germany).

The Open Consultation suggests that under Option 2 other aspects of UK law may need to be amended to allow for legal challenges, for example to allow for challenge of an AI that has been wrongly named or not named at all as the inventor. We do not believe that this is necessarily the case. Any such challenge in practice is made by a person entitled to those rights. The law already provides for this. We believe the Act and case law could readily accommodate cases where an AI system is named as the inventor.

Option 3: Protect AI devised inventions through a new type of protection

While it may be the case that AI systems can develop new patentable subject matter more quickly than humans, and potentially a larger number of inventions, in our view this does not necessarily lead to a conclusion that patent applications would be filed any earlier in the commercialisation process of an invention or lead to AI-generated inventions benefitting better from the patent system.

Patent applications are generally filed only once an invention has reached a reasonable stage of development. An AI-generated invention may, as with a human generated invention, require further development prior to an applicant being in a position to file a reasonable patent application for the concept. That development is likely to be consistent irrespective of how the invention came about in the first place.

Moreover, there is no reason to believe that the commercialisation of AI-generated inventions would occur any faster than inventions generated by natural persons. This is particularly the case, for example, with inventions in the pharmaceutical sector, although we believe it applies equally to any other invention that requires commercialisation, and often the development of new or modified markets.

Secondly, there is likely to be an awkward overlap between any new type of protection for AI-generated inventions and patent protection, in particular having regard to the fact that AI is being used in the development of new technologies by people who will then make use of the patent system to obtain the protection they desire. There is undoubtedly likely to be a significant overlap between the two and separating these is likely to be very difficult. If there were a separation determined by the nature of the inventor, what would happen in the case of inventions where the inventors are a mix of AI and humans?

There is also likely to be a difficulty in devising the requirements for obtaining any such new type of protection (for example inventive step), again because of the inevitable overlap with existing patent law. Existing patent laws do not require an applicant or inventor to explain how the invention was arrived at, the test for the inventive step being based upon what a “person skilled in the art” would have considered obvious having regard to the state of the art. What was in the mind of the inventor at the time of making the invention is not taken into account at all in current patent laws. Seeking to establish a different test for a new type of protection will inevitably blur that line and cause issues with any invention that is a collaboration between AI and humans or in which a human has used AI in arriving at the invention.

We believe that current patent law is suitable for protecting all forms of inventions, irrespective of the nature of the inventor.

COPYRIGHT

Existing copyright protection

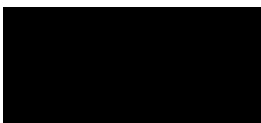
The Open Consultation makes reference to the current state of the law and in which the “author” of a “computer-generated work” is defined as “the person by whom the arrangements necessary for the creation of the work are undertaken”. The law for registered designs and unregistered designs, of course, includes similar provisions.

In our view, while this provision might have made sense in 1988, we submit that advances in AI are now such that attributing authorship to a person who may have had no true involvement in the creation of the work and cannot reasonably be defined or identified as a proper “author” should not be deemed an author of that work. Doing so devalues the concept of authorship in the 1988 Act and the efforts of people who make significant effort in a generation of a work. In our view it is time for copyright, and design, law to be modified to attribute authorship to a true and actual author of a work or design. Ownership of an AI-generated work or design could be attributed to a person and if it is the case that the principle of “by whom the arrangements necessary from the creation of the work/design work are undertaken/designed and made” is a reasonable test for attribution of *ownership*, then there is no reason to change that requirement save for abandoning attribution of authorship to that person.

The Open Consultation rightly identifies the need to support businesses and industries that use or rely on AI in the development of new technologies and works. We believe that it is critical that our IP laws protect these new technologies and works in order to foster innovation, technical development and creativity in a growing and very significant sector of our economy. The current laws, particularly following the Court of Appeal judgement in *Thaler CA*, should this be deemed to set out the definitive state of patent current law, are not adequate to do so.

We very much welcome the IPO’s efforts, as well as that of the Government, in looking seriously at updating our IP laws.

Yours faithfully,

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**RESPONSE TO OPEN CONSULTATION PUBLISHED 29 OCTOBER 2021
ARTIFICIAL INTELLIGENCE AND INTELLECTUAL PROPERTY:
COPYRIGHT AND PATENTS**

Annex - Response form

Section A

Response: Please see attached letter with our comments and observations

Section B: Respondent information

A: Please give your name (name of individual, business or organisation).

[REDACTED]

Williams Powell

British and European Patent and Trade Mark Attorneys

B: Are you responding as an individual, business or on behalf of an organisation?

- 1) Business – please provide the name of your business
- 2) Organisation – please provide the name of the organisation
- 3) Individual – please provide your name

Please see above

C: If you are responding on behalf of an organisation, please give a summary of who you represent.

We are a firm of British and European Patent Attorneys. I have personally been involved as the attorney and advocate for Dr Stephen Thaler on the DABUS cases, both in the UK [*Thaler v Comptroller of Patents, Trade Marks and Designs*] and in Europe. I am also closely involved in the DABUS cases in other jurisdictions across the world.

D: If you are an individual, are you?

- 1) General public
- 2) An academic
- 3) A law professional
- 4) A professional in another sector – please specify
- 5) Other – please specify

Please see above

E: If you are responding on behalf of an organisation, are you?

- 1) An academic institution
- 2) An industry body
- 3) A licensing body
- 4) A rights holder organisation
- 5) Any other type of organisation - please specify

Please see above

F: If you are responding on behalf of a business or organisation, in which sector(s) do you operate? (choose all that apply)

- 1) Agriculture, forestry and fishing
- 2) Mining and quarrying
- 3) Manufacturing – Pharmaceutical products
- 4) Manufacturing – Computer, electronic and optical products
- 5) Manufacturing – Electrical equipment
- 6) Manufacturing – Transport equipment
- 7) Other manufacturing
- 8) Construction
- 9) Wholesale and retail trade; repair of motor vehicles and motorcycles
- 10) Transportation and storage
- 11) Information and communication – Publishing, audio-visual and broadcasting
- 12) Information and communication – Telecommunication
- 13) Information and communication – IT and other Information Services
- 14) Financial and insurance activities
- 15) Real estate activities
- 16) Scientific and technical activities
- 17) Legal activities

- 18) Administrative and support service activities
- 19) Public administration and defence
- 20) Education
- 21) Human health and social work activities
- 22) Arts, entertainment and recreation
- 23) Other activities – please specify

Please see above

G: How many people work for your business or organisation across the UK as a whole? Please estimate if you are unsure.

- 1) Fewer than 10 people
- 2) 10–49**
- 3) 50–249
- 4) 250–999
- 5) 1,000 or more

H: The Intellectual Property Office may wish to contact you to discuss your response. Would you be happy to be contacted to discuss your response?

Yes – I would be happy to be contacted to discuss our response

I: If you are happy to be contacted by the Intellectual Property Office, please provide a contact email address.

[REDACTED]

[REDACTED]

[REDACTED]

J: Would you like an acknowledgement of receipt of your response? Yes/No

Yes please