

Annex - Response form

After you have read the consultation document, please consider the questions below. There is no expectation or requirement that all questions are completed. You are welcome to only answer the questions that are relevant to you, your business or organisation.

A copy of this response form is available to download from GOV.uk.

There are two sections on this form:

- A. Questions arising from this consultation
- B. Information about you, your business or organisation

When you are ready to submit your response, please email this form and any other supporting documentation to Alcallforviews@ipo.gov.uk.

The closing date for responses is at 23:45 on 7 January 2022.

The options for computer generated works, text and data mining and patent inventorship are summarised in the following tables.

Computer generated works	
Option 0	Make no legal change
Option 1	Remove protection for computer-generated works
Option 2	Replace the current protection with a new right of reduced scope/duration

Text and Data Mining (TDM)	
Option 0	Make no legal change
Option 1	Improve licensing environment for the purposes of TDM
Option 2	Extend the existing TDM exception to cover commercial research and databases
Option 3	Adopt a TDM exception for any use, with a rights holder opt-out
Option 4	Adopt a TDM exception for any use, which does not allow rights holders to opt out

Patent Inventorship	
Option 0	Make no legal change
Option 1	"Inventor" expanded to include humans responsible for an AI system which devises inventions
Option 2	Allow patent applications to identify AI as inventor
Option 3	Protect AI-devised inventions through a new type of protection

Section A

Copyright – computer generated works (CGW)

1. *Do you currently rely on the computer-generated works provision? If so, please provide details of the types of works, the value of any rights you license and how the provision benefits your business. What approach do you take in territories that do not offer copyright protection for computer-generated works?*

NA

2. *Please rank these options in order of preference (most to least preferred) and explain why.*

None of the discrete options offer an optimal legal policy. The best policy would be to retain the CGW provision (option 0) but to remove it from the category of *original* works (s.1(1)(a), CDPA) [to resolve the originality dilemma] and insert it into the category protecting labour and investment-led works (s.1(1)(b)). Or, in the alternative, the current CGW provision can be re-formulated into a *sui generis* right (Option 2) but this would involve a review of the rationale, definition, criteria and duration of the right.

a) Options 0 and 2

s. 9(3) CDPA 1988 (read with s.178) is the basis of computer-generated works in UK. This is in accordance with the Government's 2021 wish-list in its response to the previous IPO's consultation i.e. to 'preserve the central role of intellectual property in promoting human creativity and innovation.'

The provision -as it stands now - is well regarded internationally as being an optimal solution in relation computer-generated works (CGW) or AI-generated works (whatever this may mean) – it has been adopted in New Zealand, India, Hong Kong and Ireland, and has influenced South African jurisprudence.¹ Some commentators view s.9(3) as being the first legislation in the world to offer copyright protection in the context of AI.² There is nothing extraordinary in protecting *computer-generated* original LDMA works when juxtaposed against the current CDPA framework which reflects the dual role of British copyright law in accommodating creative and investment inputs: (i) original LDMA with full scope of protection, including 70 years *post mortem auctoris*; (ii)

¹ Copyright Act 1994 (New Zealand) s 5(2)(a); Copyright and Related Rights Act 2000 (Ireland) s 21(f); Copyright Act 1957 (India) s 2(d)(vi); Copyright Ordinance Cap 528 (Hong Kong) s 11(3); see *Haupt v Brewers Marketing Intelligence (Pty) Ltd* [2006] SCA 39 (RSA), Supreme Court of Appeal of South Africa, 29 March 2006 (Court referenced the UK provision as the South African law was silent on computer-generated works).

² Toby Bond and Sarah Blair, 'Artificial Intelligence and Copyright: Section 9(3) or Authorship without an Author' (2019) 14 JIPLP 423 (hereafter Bond and Blair, 'Artificial Intelligence and Copyright'); A Guadamuz, 'Do Androids Dream of Electric Copyright?', https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2981304

Originality and authorship cannot be resolved, however, as long as the notion of the protected subject matter remains unclear. What is being protected here? The creative input or the investment or both? The consultation starts from the premise of an “AI generated work”. An AI generated work, in that sense, can rest upon an original choice by a human creator, an algorithm, (typically) using big data and everything in between. We should note that some of the works on this spectrum would be standard *original* works if a human author can be identified.

And this may be resolved – as suggested here – by making CGW available under s.(1)(1)(b) only. But there has to be a clear rationale as to why we would wish to protect non-original CGW (or AI-derived) works; this query applies if we consider Option 2 as well.

b) Options 2 (and 1)

There is no evidence-based reasoning to warrant Option 1 i.e. the removal of protection of CGW without some sort of replacement of a similar right – either as a neighbouring right outside the *originality* classification; or as a *sui generis* right.⁸

Indeed, it appears absurd from having been pioneering in the provision for the Government to abolish the provision. CGW or AI-derived works are a factual occurrence within the creative industries ; and we have witnessed the acceptance of such works within copyright law in other jurisdictions.⁹

It is arguable that the current copyright framework may accommodate Option 2 in that the UK's CGW provision might be explained as a form of related right that was not covered by the EU *acquis* at the end of 2020. Moreover, there is currently very little evidence that a (new) right is needed, and how such a right would impact upon different sectors (possibly incurring additional transaction costs and much legal uncertainty).

There is, however, some theoretical support for a *sui generis* right outside the Berne Convention genre of works. This option would provide the UK legislator with an opportunity to shape IP protection for AI works appropriately. Nevertheless, for Option 2 to work, we strongly recommend that the reformed law take into account several of the concerns discussed above namely:

Nor is it very far from individual EU member states’ creative contribution threshold in relation to collective works or films since much is determined with reference to the skill and labour input of the contributor.

⁸ Theoretically it is arguable that Option 1 – i.e. the removal of CGW could be based on the fact that there is an internal tension within the CDPA in relation to originality as applied to CGWs. Moreover, the term of 50 years protection may be considered too lengthy in relation to original non-human created works. However, a more preferable option would be a mixture of Options as advocated above.

⁹ For example in China, *Shenzhen Tencent v Shanghai Yingxun*, 2019; and India (recognition of RAGHAV, an AI, as one of the co-authors of an artistic work).

- The rationale of the new right, in light of the current framework of the whole CDPA 1988 with its various rights, durations and scope of protection;
 - The concept of “computer-generated” or “AI-generated” work;
 - Clear guidelines on authorship/ownership;
 - Clear guidelines on criteria of protection - whether to retain the criterion of originality but re-defined (as is the case with the design right, and with reference to commonplace features), or to employ other existing criteria (as in the database right) or to introduce new (and potentially confusing) criterion of protection;
 - Shorter duration - rather than the international norm of 50 years for performers/sound recording rights, the appropriate approach would be for further empirical work in establishing the appropriate term of protection;
 - Clear scope of protection/infringement test - in a manner that is narrower than is applicable to Berne Convention “works” and one suggestion is to re-orient the infringement test towards the recent jurisprudence on the *sui generis* database right (substantial extraction) which requires that the claimant must demonstrate direct competition.
3. *If we introduce a related right for computer-generated works, as per option 2, what scope and term of protection do you think it should have? Please explain how you think this scope and term is justified in terms of encouraging investment in AI-generated works and technology.*

As stated above, if Option 2 were adopted, the right should be lesser than the current 50 year term. There should be a clear test of infringement which distinguishes such a right from Berne Convention rights; for example, a test which adopts the right of extraction (within the *sui generis* database right) which ties the scope of protection clearly to market environment i.e. the claimant must demonstrate direct competition.

Finally, one consideration should be whether or not such a right should be registered. The incalculable transaction costs incurred by searching for rights clearance for licensing purposes show that one of the main problems with mass-copyright protection for digital materials is lack of traceability for the provenance and ownership of the work. As stated below in terms of patents, registration and charging renewal fees help weed out low value patents – and copyrights. This may be one of the most important reasons to shift CGWs out of the Berne Convention umbrella and convert it into a registered, short right.

4. *If we introduce a related right for computer-generated works, as per option 2, what scope and term of protection do you think it should have? Please explain how you think this scope and term is justified in terms of encouraging investment in AI-generated works and technology.*

As stated above, if Option 2 were adopted, the following considerations are important:

- **Duration:** the duration should be shortened from the current 50 year term – we advocated above that a consultative exercise may be necessary for this; and reference can be made to other analogous schemes including the 3 year unregistered design rights, the 15 year database rights, the 25 year typographical/first publication rights, and the 2 year press publisher right (under the 2019 EU Copyright in the Digital Single Market).
- **Scope:** there should be a clear test of infringement which distinguishes such a right from Berne Convention rights; for example, a test which adopts the right of extraction (within the *sui generis* database right) which ties the scope of protection clearly to market environment i.e. the claimant must demonstrate direct competition
- **Dual system:** As advocated above, Option 2 does not automatically mean the current CGW provision should be repealed – note the historical and continuing ambivalence both in EU Member States' laws and international copyright laws as to designs, performances, databases or compilations, photographs, and films where stronger rights are granted to *original creative works*, and a related right to non-original works.¹⁰
- **Need for formalities/registration:** Finally, one consideration should be whether or not such a right should be registered. The incalculable transaction costs incurred by searching for rights clearance for licensing purposes show that one of the main problems with mass-copyright protection for digital materials is lack of traceability for the provenance and ownership of the work. As stated below in terms of patents, registration and charging renewal fees help weed out low value patents – and copyrights. This may be one of the most important reasons to shift CGWs out of the Berne Convention umbrella and convert it into a registered, short right.

¹⁰ For an account of this ambivalence, see *Dutfield & Suthersanen on Global Intellectual Property Law* (Edward Elgar, 2020), sections 4.2.3, 4.2.4 and 4.5.4.

Patents

5. *Please rank these options in order of preference (most to least preferred) and explain why?*

(a) Option 1

Option 1 seems to amount to Option 0 with some added clarifications. Such clarifications would benefit the parties involved in innovation. But, the scope of potential inventors should be limited (e.g., to operators). Option 1 treats both programmer and operator (and others) of an AI system as potential inventors. If an operator wants to apply to protect an AI generated invention, that individual may need the authorization of multiple individuals. For example, if individual X (inventor 1) developed the AI machine for Company A (owner 1). Company A wants to sell or license the AI machine to Company B. Company B (owner 2) then has employee Y (inventor 2) uses the AI to develop a patentable invention. Company B would need inventor 1 to assign ownership (as an employee, inventor 2 usually does). Company B may not know who inventor 1 is and it may not be in the interest of Company A to disclose that information. Thus, the more recognizable potential inventors, the higher the transaction costs. Thus, these added costs could incentivize people to run a closed-shop (i.e., exploit AI themselves) instead of specializing. In the alternative, the right of attribution for certain individuals could become transferrable or alienable. This would allow individuals to negotiate around the above transaction costs.

(b) Option 0

Option 0 may be the second best option. As discussed below, the disclosure associated with option 3 raises many concerns. Thus, the best approach would be to take a field-by-field approach: adapt the inventive step requirement based on the widespread use of AI system in a specific field. If the average researcher has access to an AI system in a field, then the patent prosecutor should assume that the skilled person has access to an AI and adjust the inventive step test accordingly. This approach would avoid the IPO from having to rely on voluntary disclosure and the current legal framework already allows for such adaptation. However, option 0 leaves too much uncertainty that Option 1 can resolve.

(c) Option 3

Option 3 may be the best option; however, due to the lack of enforceability, it becomes the third best option. If during application, applicants had to disclose how they have reached their outcome because it would affect the patent protection or duration, then it

would incentivize them to lie. Facing a “stricter inventive step test” would also incentivize applicants to lie about their inventive process.

If the Intellectual Property Office believes that such an approach is necessary, the better approach could be means tested (e.g., the USPTO carries out a means test for patent fees) or a non-use of AI test: make the inventive step test stricter unless the applicant can prove they did not use or had access to an AI. Such a system would incentivize those inventors who did not have access to AI to disclose the necessary information to access a less “strict inventive step test” during patent prosecution.

(d) Option 2

This is the worst option because it does not align with any recognize goals of the IP system. First, if we assume that the goal of the patent system is to incentivize inventors, machine do not need an incentive. The humans behind the machine need the incentive. These individuals already benefit from having the AI system and profit the AI designed inventions. Second, if we assume that the patent system exists to disseminate information, then protection AI generated inventions would not help further disseminate information: it would only incentivize others to adopt AI system to process the overload of information. Furthermore, it opens the door to other problems. For example, if AI system can benefit from the patent system, they should also face the responsibility of the patent system (e.g., liability for infringing). However, a machine cannot be held responsible.

s 7(3) PA is the appropriately worded and does not require amendment at present. AI should not be recognised as an inventor in the foreseeable future. Current law should be retained and reviewed periodically in view of the evidence-base.

6. *Would the changes proposed under Options 1, 2 and 3 have any consequential effects on the patent system, for example on other patentability criteria?*

The common use of AI should impact the inventive step requirement. Furthermore, if option 1, 2 or 3 is adopted, the inventive step requirement should change: (1) the common knowledge should be based on what an AI system should know; (2) the person skilled in the art should be at least a person equipped with an AI machine or at best should be an AI machine itself. However, this approach will raise issue about what kind of AI machine, what type of information has been fed to the machine, et. Option 1, 2 and 3 will impact the sufficiency and usefulness. Many AI systems will create inventions based on theory and speculations: an application should not be granted on theory or probabilistic; or patent may become “fishing” expeditions.

For options 1 and 2:

7. *If UK patents were to protect AI-devised inventions, how should the inventor be identified, and who should be the patent owner? What effects does this have on incentivising and rewarding AI-devised inventions?*

If AI-devised inventions become protectable, then “the inventor” should be identified using the AI-software name and version and “the inventor” should also identify the AI operator. Under such a system, the patent owner should be the machine operator and/or its employer by default. It would limit the differences with the current system.

The IPO should not worry about the impact of inventor disclosure on incentivizing and rewarding AI-devised inventions because patents are not an efficient way to incentivize innovation. As most surveys show, inventors prefer to rely on secrecy and first-to-market as means to profit from an invention: even without patent, most incentives to innovate still remain.

As showed by historical data, inventors rely on patents when reverse engineering becomes easier. AI system may enable easier and quicker reverse engineering; thus patenting may become more important in the future. However, disclosing the AI system name and version has the same impact on inventiveness as disclosing inventors name: the competitors in the R&D market may not have access to the AI regardless of the name in the same way they might not have had access to researcher regardless of their name appearing on an application.

8. *In considering the differences between options 1 and 2, how important is it that the use of AI to devise inventions is transparent in the patent system?*

As discussed above, regardless of whether option 1 and 2 is adopted, the patent system will have to adapt its patentability requirements. AI system become part of the “team”; thus the skilled person may have to include the use of AI (e.g., see Noam Shemtov and Garry A. Gabison, *The Inventive Step Requirement and The Rise of The AI Machines*, SSRN, 2021)

9. *Would the UK adopting option 2 affect your global patent filing strategy, if so, how?*

If the UK were to allow applications to identify AI as inventor, it would be at odds with most systems. Option 2 is not compatible with many other jurisdictions including the US, the EU, and Japan. Australia has allowed such patents but it is more the exception

than the rule. This difference would make the UK a less attractive place to patent inventions: inventors will have no incentive to declare that an AI designed the invention because that information could be used against them in other jurisdictions.

For option 3:

10. What term and scope of protection should a new right offer?

An AI designed invention should have a shorter protection period than current patent. Current patent duration is not based on any data. It treats every field the same whereas research have identified many differences between inventions in different fields (including patent renewal behaviour). Given the current opportunity to amend the patent system, the protection period should be field specific – based on the benefit to society and the average (and true) R&D costs. The current scope of protection could be used for the new right.

11. What should the criteria for grant of a new right be and why? Particularly should it:

a) Replicate the current requirements for a patent?

The current system could be replicated. However, the new system should not treat patent as fishing expeditions and grant the new protection only when the inventions has showed its usefulness (or at least with a high likelihood of success).

b) Set a different bar for inventive step?

s 2 PA - An invention shall be taken to involve an inventive step if it is not obvious to a person skilled in the art, having regard to any matter which forms part of the state of the art by virtue only of section 2(2) above (and disregarding section 2(3) above).

If, sometime in the future, it becomes common general knowledge to apply AI to make improvements to the known closest prior art, then it may transpire that an invention is obvious and therefore not inventive. There are also implications if the AI is considered part of the skilled person 'team'. However, if the AI has been developed purely for the purposes of gathering information on the state of the art, such information should be excluded from the test of obviousness.

In other words, the inventive step requirement should adapt to the use of machines. Therefore, the person skilled in the art should be equipped with an AI system or be an AI system. The common general knowledge should be expended to the full state of the art because AI system to do not face the limitation as normal humans.

c) Be an automatic or registered right?

Even if probabilistic, no right that have the ability to exclude market participant should be automatic. This automatic approach would lead to more litigation and waste: patent prosecution serves as a first filter of inventions; without such filter, market participants will end up in court more often, waste more resources, and take away judicial resources from the public. Furthermore, with so much uncertainty, an automatic system would disincentivize follow-on innovation. An automatic system would favour static before dynamic innovation. Given that AIs (and their inventions) are dynamic and constantly evolving system, the imbalance would harm more than advance society.

The right should be registered and a fee should be applied: the large the fee, the fewer AI-designed inventions will be patented. Having a registration and charging renewal fees help weed out low value patents – as showed by research.

General

12. What role does the IP system play in the decision of firms to invest in AI?

Many AIs were and are developed when the IP system is unclear about the patentability of these inventions. For example, IBM has been developing AI systems before any application even existed. One of its first AI played chess. Other means of profiting (e.g., secrecy) remain available regardless of the IP system. In the pharmaceutical industry, first to market (and to get a market authorization from the health authority) will play a bigger role than the IP system. In some fields, the IP system may incentivize companies to invest in AI at the margin; but, without more information, designing an IP system for the future remains a guessing game.

13. Does the first mover advantage and winner-take-all effect prevail in industries adopting AI? How would this affect the impact of the policy options proposed on innovation and competition?

Based on the *Impact Assessment*, around 10% Information and Communication companies use AI system. The first mover advantage and winner-take-all are ubiquitous in that field. Innovation keeps occurring in this space but many large companies (Google, Facebook, etc.) rely on “catch-and-kill” to eliminate competition. However, without a more detailed survey, it remains unclear how AIs are used in these industries. Competition law is a maladapted tool to fast moving and innovation industry. AIs may enhance innovation because innovations may hit the market more quickly. But AIs may hinder competition because the one’s with a head start will be able to build on that head start. Even looking at AIs, Google and its search engine show what happens in such industries.

14. How does AI adoption by firms affect the economy? Does the use of AI in R&D lead to a higher productivity?

Based on published research, the R&D cost per patent has been increasing over the years. AIs may make research cheaper and reverse this trend: AIs can lead to more productivity (patents per R&D expenditure). AIs adoption could allow creating inventions for market segments or niches that were not previously profitable (e.g., orphan drugs). However, this remains speculative and no research has been done in the field.

15. Do the proposed policy options have an impact on civil society organisations? If so, what types of impacts?

No comment.

Section B: Respondent information

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

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

[Redacted]

On behalf of –

Queen Mary Intellectual Property Research Institute, School of Law, Queen Mary University of London

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

The Queen Mary Intellectual Property Research Institute (QMIPRI) is an internationally renowned academic research institution in intellectual property law and related areas of commercial law. We adopt a wide spectrum of approaches to legal research, including doctrinal, theoretical, applied, comparative, historical, sociological, empirical and interdisciplinary perspectives.

D: If you are an individual, are you? **NA**

- 1) General public
- 2) An academic

- 3) A law professional
- 4) A professional in another sector – please specify
- 5) Other – please specify

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

- 1) An academic institution

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

- 1) Education
- 2) Other activities – please specify - Research

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

- 1) 10–49

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

[REDACTED]

[REDACTED]

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

Yes