



Intellectual  
Property  
Office

# AI and Inventorship

## AI and IP Consultation

Dr Nicki Curtis  
UK Intellectual Property Office

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## Call for views on AI and IP: intro

- Last year, the UK's Intellectual Property Office asked whether IP framework still fit for purpose in relation to AI.
- For patents, we asked a number of questions, including whether there was a case for patent law to protect AI-devised inventions.
- We also asked whether there were impacts for copyright, trade marks, designs and trade secrets.

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## Call for views on AI and IP: responses

- 92 responses. Government response published March earlier this year.
- Mixed views on the question “Can current AI systems devise inventions?”
- Some viewed current system adequate, but concerns expressed that the absence of patents for AI-devised inventions could have damaging impacts on:
  - investment in building, owning and using AI in R&D
  - follow-on innovation if trade secret protection used as alternative to patent rights
- Some calls for sui generis IP right to protect AI-devised inventions not patents. This right would serve an environment where innovation is faster, cheaper and with high turnover rate.

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## Government response: next steps in patents

We committed to consult on a range of policy options, including legislative change, for protecting AI-devised inventions which would otherwise not meet inventorship criteria.

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## **Option 0: policy aims and legal changes to achieve**

Effect – patent will be granted/valid only if the deviser/s of the invention is human.  
No patents for AI devised inventions.

Legal change – None. Maintain the status quo.

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## **Option 1 : policy aims and legal changes to achieve**

Effect – patent will be granted/valid whether the invention is devised by human  
and/or AI.

Legal change - definition of inventor expanded to include those humans  
responsible for making the arrangements for AI to devise an invention.

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## Option 2: policy aims and legal changes to achieve

Effect – patent will be granted/valid whether the invention is devised by human and/or AI

Legal change (a) allow AI to be named as inventor. Patent ownership qualification to include those humans responsible for making the arrangements for AI to devise an invention, OR

Legal change (b) no requirement to name AI inventor. Patent ownership qualification to include those humans responsible for making the arrangements for AI to devise an invention

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## Option 3: policy aims and principles

Effect – New sui generis patent-like right to protect inventions devised by AI. Current patent system continues to protect only human devised inventions.

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## AI and IP Consultation

The Government consultation on AI and IP can be found here:

[Artificial Intelligence and IP: copyright and patents - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/consultations/artificial-intelligence-and-ip-copyright-and-patents)

This webpage includes links to both patents and copyright aspects of the consultation and a link to the response form.

**Consultation closes on Friday 7 January 2022**

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## ADVANCED AI SYSTEMS & INVENTIONS

### TWO KEY CHALLENGES FOR THE UK PATENT SYSTEM

- LACK OF ANY “NATURAL PERSONALITY” FOR A MACHINE
  - Since a machine is not a natural person, it cannot be regarded as an inventor for the purposes of section 7 and 13 of the UK 1977 Patents Act
  
- OWNERSHIP OF RIGHTS
  - If a human inventor cannot be identified under the current legislative framework, derivation of right through ownership of the invention does not meet the requirements of section 7(2) and hence the applicant is not entitled to a granted patent for the invention



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## DEFINITION OF INVENTOR

### NOT currently globally harmonised ...

- Any human inventors named in a patent application for an invention should be able to meet the relevant patent law tests different patent offices and courts use for inventorship with consistent results.
- However, for example:
  - **UK: Section 7(3) PA 1977** “inventor” in relation to an invention means **the actual deviser of the invention** and “joint inventor” shall be construed accordingly.
  - **US: 35 USC 100(f)** defines the term “inventor” as the individual who **invented or discovered the subject-matter of the invention**.
  - Conception is the touchstone of inventorship, where conception is “the formation in the mind of the inventor, of a definite and permanent idea of the complete and operative invention, as it is hereafter to be applied in practice.”\*

\*See for example, *Burroughs Wellcome Co. v. Barr Lab., Inc.*, 40 F.3d 1223, 1227-28 (Fed. Cir. 1994) “[c]onception is the touchstone of inventorship.” Conception is “the formation in the mind of the inventor, of a definite and permanent idea of the complete and operative invention, as it is hereafter to be applied in practice and *Levin v. Septodont Inc.*, 00-2234 (4th Cir. 2002), Court of Appeals for the Fourth Circuit)



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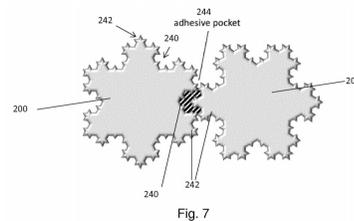
## EP3564144

### The technical field of the invention may not be CII ...

1. A food or beverage container comprising:
  - a wall defining an internal chamber of the container, the wall having interior
  - 5 and exterior surfaces and being of substantially uniform thickness;
    - wherein the wall has a fractal profile with corresponding convex and
    - concave fractal elements on corresponding ones of the interior and exterior
    - surfaces; and
    - wherein the convex and concave fractal elements form pits and bulges in
    - 0 the profile of the wall.



- *No indication from the claim that a human inventor was not involved*



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## DETERMINING INVENTORSHIP FOR AI INVENTIONS

### At a practical level, an inventor is usually not:

- Someone/thing whose only contribution to devising an invention/reducing an invention to practice is *by exercising ordinary skill in the art*.
- Someone/thing who only performs routine experiments or who assembles the invention only by exercising ordinary skill in the art.
- Someone/thing whose only contribution is an obvious element of the invention.
- Someone/thing who only conceives of the result to be obtained but not how to achieve it.
- Someone/thing who only discovers a problem but not a solution.
- Someone/thing who only provides a pointer or suggestion to an improvement but does nothing more than this.
- ?



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## IF HOW WE DETERMINE INVENTORSHIP DOES NOT CHANGE ...

### Otherwise patentable inventions may not be patentable

- Can we fudge?
  - “Fudging” inventorship for filing purposes is not only unprofessional but unethical – and it is especially risky if there is subsequent litigation
  - Consequences include: invalidation, lack of standing to sue etc.,
- Can we fix?
  - Technically yes – if the law changes – however any human inventors named in a patent application for an invention should be able to meet the relevant patent law tests
  - different patent offices and courts use for inventorship with *consistent* results.



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## VARIOUS CONSULTATIONS ON INVENTIONS INVOLVING AI

### The CIPA proposals responding to the UKIPO call for views ...

- The contribution of an AI system to an invention may be such that human involvement falls short of being the actual deviser of the invention due to a significant contribution from an AI system.
- Section 7(3) PA 1977 – could be amended to specify that a person responsible for the output of the AI system which provides *the contribution* should be regarded as the inventor
- Alternatively – the person responsible for the output from the AI system could be denoted as the first owner (rather than as the inventor) – but this creates a problem if international law and practice does not follow this approach
- Various other responses with different proposals were submitted in response to the call for views



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## ANYONE CAN FILE A PATENT APPLICATION, BUT

### A patent for an invention belongs to the inventor initially

- If a human inventor cannot be named under the current legislative framework, ownership of a patent for the invention created will not be clear.
- Patents are not cheap rights to obtain, particularly if global protection is desirable
- Clarity and a globally harmonised solution to determining inventorship and consequent ownership of patent rights is needed
- *Ultimately, the origin of an invention should not affect its patentability.*

