

I. Current law and practice

1) *What are the requirements to be considered an inventor of a patented invention in your jurisdiction?*

Article 8 of the Dutch Patent Act - DPA - defines the applicant to be inventor. Exceptions to this rule are set out in articles 11, 12 and 13 DPA. In cases where the inventor does not have the right to be the applicant, for example if the inventor is an employee, the inventor is to be named as such. Whether one is considered to be an applicant will depend on whether a person made an inventive contribution to the invention (as opposed to a trivial/obvious contribution).

2) *Assuming valid inventorship, does your law include provisions concerning the naming of the inventor of an invention? If yes, please briefly explain.*

The Paris Convention in Article 4^{ter} (to which the Netherlands is a member) and the DPA in Article 14 grant the inventor the right to be named in the patent as inventor. Article 14 of the Dutch Patent Act - DPA - states that "any person who has made an invention for which a patent application has been filed [...] shall have a right to be named as the inventor in the patent".

The inventor may waive the right to be named. However, he/she cannot transfer the status as inventor, because this is considered to be a non-assignable personal right.

3) *Does your law, including any regulations or official guidelines, provide any specific guidance or rules on inventorship of inventions made using AI?*

The DPA, nor any international treaty on patent law that has effect in the Netherlands provides any official guidelines or regulations on rules of inventorship of inventions made using AI.

4) *Under your law, is it possible for an AI entity to be considered an inventor or co-inventor in a patent application? If yes, please explain.*

The Dutch group does not consider it to be possible for an AI entity to be considered an inventor or co-inventor of inventions made using AI, in particular, because this is incompatible with the legal consequences of being an inventor or co-inventor in accordance with property law in general and intellectual property law in particular. Inventor-status implies ownership of rights (such as the right to be named in the patent application, as well as the presumption that the applicant is the inventor and therefore – in that capacity – has the right to apply for a patent). However, only parties or persons having legal personality (in Dutch: "rechtssubjecten"), being

either natural persons or legal persons, can hold rights - i.e. to an invention - and AI is neither of those.

The notion that the inventor is to be a natural person finds confirmation in Article 38 DPA, which relates to correction of details of inventorship. Article 38(1) uses the wording “een ieder”, which is interpreted as referring to a natural person. Article 38(2) indicates that a person can file a request not to be mentioned as inventor, the Dutch group considers that only a natural person is capable of understanding the concept of being named as an inventor and value thereof, for which reason only a natural person can provide and sign such request.

This means that the inventor must be a legal person. Moreover, Art 24 1.b states that an application mentions the place of residence of the natural person who made the invention. Software/AI is not a legal person and certainly not a natural person, so it cannot be considered an inventor in a patent application.

5) *Under your law, is it possible to name an AI entity as an inventor or co-inventor in a patent application? If yes, please explain.*

As indicated under 4), the DPA at least implicitly requires that an inventor is to be a natural person. Hence, we do not consider it possible to name an AI entity as an inventor or co-inventor.

6) *In connection with a hypothetical patentable invention made using AI, which of the following contributions by one or more human contributors could be considered under your law as being at least co-inventorship of an invention made using AI? In each case, please explain why or why not. Please note this question does not consider inventorship of the AI itself; only inventorship of an invention made using the AI:*

a. Yes, although our law does not consider these circumstances specifically. But in this case the human contributor is the only contributor to the invention. The natural person who uses the AI system as a tool to obtain an intended result and/or identifies the invention will be considered as the inventor. Depending on the specificity of the AI system, the AI developer could be considered co-inventor.

b. Yes, although our law does not consider these circumstances specifically. If a human contributor uses AI as a tool and the AI discovers a useful relation, the human contributor would be considered to be the inventor (if the unintended result is a patentable invention). In this situation, the human contributor still recognises the invention. The fact that the invention was obtained by accident, does not play a role.

c. Yes, this is possible depending on the specificity of the AI system, although our law does not consider these circumstances specifically. When the human contributor designs or contributes to the design of the AI algorithm used in scenarios a or b above, it depends on the circumstances whether the human

contributor would be considered to be the (co-)inventor of the obtained patentable invention. If it is a system dedicated to contribute to a specific category of inventions the person designing or contributing to the design of the AI system could be considered an inventor. This should be assessed on a case-by-case basis, depending on the inventive contribution of either the user of the system or the developer of the system.

In practice, there would only be a patentable invention if the contribution required inventive labour aimed at obtaining the specific invention(s) that was/were ultimately obtained.

d. Yes, this is possible, depending on the specificity of the data-set used in training the AI system, although our law does not consider these circumstances specifically. If the trainer of the system merely trains the system and provides it to third parties as a tool, we do not consider this person to be an inventor of the final invention. If the trainer of the machine is part of an integral team that also invents the final invention, the trainer may be considered as co-inventor. Like 6c, this should be assessed on a case-by-case basis.

There is no conceptual difference as regards the invention, whether a person designs the AI or selects the data. The human contributor would only be considered to be a (co-)inventor if this selection required inventive labour aimed at obtaining the specific invention(s) that was/were ultimately obtained.

e. Yes, the same reservations as mentioned in 6a and 6b apply, although our law does not consider these circumstances specifically. With regards to generating or selecting the data used as input for the trained AI algorithm, the answer would again be very similar to the answer given under c. Again, there is no conceptual difference. The human contributor would only be considered to be a (co-)inventor if this generating or selecting of data required inventive labour aimed at obtaining the specific invention(s) that was/were ultimately obtained.

f. Yes, identifying an invention could lead to inventor-status, although our law does not consider these circumstances specifically. This depends on the amount of human interaction involved and therefore should also be assessed on a case-by-case basis. The human contributor would only be considered to be a (co-)inventor if selecting this output and recognising it to be a patentable invention required inventive labour.

7) *Assuming an invention was made using at least a minimum amount of AI contribution during the inventive process at any stage, would this be considered as a red flag under your law leading to an exclusion of the patentability of the invention as a whole? Please briefly explain.*

If an invention was made using at least a minimum amount of AI contribution during the inventive process at any stage, this would not be considered as a red flag under Dutch law leading to an exclusion of the patentability of the invention as a whole, as the DPA does not have such red flag provision.

II. Policy considerations and proposals for improvements of your Group's current law

8) *According to the opinion of your Group, is your current law regarding inventorship of inventions made using AI adequate? Please briefly explain.*

The Group considers current law regarding inventorship of inventions made using AI adequate as the Group does not consider an AI to be capable of being an inventing entity. Furthermore, Dutch property law as part of Dutch civil law is incompatible with the consequences of an AI entity being an inventor. To Dutch civil law, an AI is considered as a 'material asset' that cannot have any rights or obligations.

9) *According to the opinion of your Group, would recognition of an AI entity as an inventor or co-inventor conflict with the public policy issue of fostering innovation (you may also refer to other general patent law doctrines under your law, if applicable)? Please briefly explain.*

Yes. In short, AI systems do not need to be incentivised to invent by granting patents. AI is a tool to be used in the inventive process, like a microscope or a CAD tool. It will not make more or better inventions if it is in the prospect of patent protection. An important consideration in this respect is that the development of AI systems and the use of AI systems as a tool to invent should be incentivised. Such incentive may be provided by granting patents to parties having developed an inventive AI.

10) *In your jurisdiction, what is the purpose of naming the inventor in the patent application? Does the naming of the inventor in the patent application, if applicable, consider aspects of personal rights under your law, e.g., does it fulfil a reward function for personal effort? Please briefly explain.*

The rationale of the right to be named as inventor is an implementation of international treaties. The rationale of the provisions of the right to be named is to recognise the personal contribution of an inventor and to - under circumstances - provide financial compensation accordingly, other than salary. Another purpose is informing the public about the identity of the inventor and the origin of the applicant's right to the patent. The right to be mentioned is a personal and non-transferable right.

11) *According to the opinion of your Group, would the recognition of inventorship by an AI entity conflict with or undermine the purpose of naming the inventor in the patent application you identified in question 10? Please briefly explain.*

As long as the natural person(s) involved in the inventive process are also named as inventor(s) there is no undermining effect in principle. However, co-inventorship with AI could have further

reaching implications, e.g. financially. If financial profits achieved with the invention must be distributed equally among the inventors and one of them is AI, the position of the natural persons - who are considered to be the ones in need of an incentive to invent - is undermined.

According to the Dutch Group, AI should be seen as a tool that can be used in an inventive process. It would make no sense to mention all the tools used in the inventive process as inventors, even if the tools are 'smart' - a qualification of which many definitions exist. The development of these so-called smart tools, however, may be incentivised, as any other advancement of technology.

III. Proposals for harmonisation

12) *Do you consider international harmonisation regarding inventorship of inventions made using AI as desirable? Please briefly explain.*

Yes, as a matter of general principle international harmonisation is desirable. This is because we believe that harmonisation of patentability is beneficial to commerce in general. There is no valid reason to exclude AI inventorship from international harmonisation. Commercialisation of AI and its use in the inventive process is becoming more and more common and international harmonisation can bring clarity and advantage to industry as to its IP protection. In the absence of harmonisation, it would be difficult to predict who would be entitled to inventions made in such a setting.

For the avoidance of doubt, the Dutch group does not favour to globally recognise an AI as a possible inventor.

13) *What should be the requirements to be considered an inventor or co-inventor of an invention made using AI?*

The requirements should be the same as for inventions not made using AI. The Dutch group considers that an inventor should be a natural person, who has provided inventive activity in the creation and recognition of the inventive contribution. In the absence of any inventive contribution there is no invention.

14) *Should an AI entity, for example when considered as an "artificial person", be considered an inventor or co-inventor of an invention made at least in part by contribution from the AI entity assuming the same contribution, if made by a human inventor, would be considered inventorship under applicable patent law?*

The Dutch group considers it not possible or at least not desirable that an AI entity is an inventor or co-inventor and could be named as such.

15) *If AI is considered an inventor or co-inventor of an invention made using AI, should it be possible to name AI as an inventor or co-inventor in a patent application?*

No, the Dutch group considers it not possible or at least not desirable that an AI is an inventor or co-inventor and, therefore, it should not be possible to name an AI as an inventor or co-inventor.

16) *In connection with a hypothetical patentable invention made using AI, which of the following contributions by one or more human contributors should be considered under your law as being at least co-inventorship of the invention made using AI? In each case, please explain why or why not. Please note this question does not consider inventorship of the AI itself; only inventorship of an invention made using the AI:*

Note: as question 16 and its context is identical to question 6, the answers are identical. However, we assume that the context of question 16 should be interpreted in the ideal context as opposed to the current context. In the ideal context, the Dutch group has the following answers:

- a. Yes. In this case the human contributor is the only contributor to the invention. When a human contributor intends to achieve a certain result and uses AI as a tool to obtain that result, the human contributor *should* be considered to be the inventor.
- b. Yes. In this case, if a human contributor uses AI as a tool and the AI discovers a useful relation, the human contributor *should* be considered to be the inventor (if the unintended result is a patentable invention). In this situation, the human contributor still recognises the invention. The fact that the invention was obtained by accident, does not play a role.
- c. Yes, in this case, when the human contributor designs or contributes to the design of the AI algorithm used in scenarios a or b above, it *should* depend on the circumstances whether the human contributor would be considered to be the (co-)inventor of the obtained patentable invention. In practice, this would be the case only if the contribution required inventive labour aimed at obtaining the specific invention(s) that was/were ultimately obtained.
- d. Yes, with regards to selecting the data or the source of the data used to train the AI algorithm, the answer *should* be very similar to the answer given under c. There is no conceptual difference as regards the invention, whether a person designs the AI or selects the data. The human contributor should only be considered to be a (co-)inventor if this selection required inventive labour aimed at obtaining the specific invention(s) that was/were ultimately obtained.
- e. Yes, the same reservations as mentioned in 6a and 6b apply. With regards to generating or selecting the data used as input for the trained AI algorithm, the answer *should* again be very similar to the answer given under c. Again there is no conceptual difference. The human contributor should only be considered to be a (co-)inventor if this generating or selecting of data required

inventive labour aimed at obtaining the specific invention(s) that was/were ultimately obtained.

f. Yes; this seems to be a classical selection invention. The human contributor should only be considered to be a (co-)inventor if selecting this output and recognising it to be a patentable invention required inventive labour. This depends on the amount of human interaction involved and therefore should also be assessed on a case-by-case basis.

17) If an invention was made using at least a certain level of AI contribution during the inventive process should the invention be excluded from patentability as a whole? If yes, what would be the minimum level of AI contribution to trigger this exclusion? Please briefly explain.

The Dutch group does not consider a level of AI involved in the conception of an invention to be a reason for excluding the invention from patentability as a whole. The reason is that the Dutch group considers AI to be a tool. By analogy, inventions that were made using software are also not excluded from patentability as a whole. Similarly, the quality of a microscope used in coming to a certain invention should play no role in the patentability of that invention.

18) Please comment on any additional issues concerning any aspect of inventorship of inventions made using AI you consider relevant to this Study Question.

The Dutch group believes that the further development of AI, including its independent problem-solving capabilities, will have an impact on how inventive step is assessed. If such AI systems become part of the common toolbox of the average skilled person, it begs the question whether there can be an inventive step in an invention resulting from this 'smart AI'. Even if the invention is not made with AI systems capable of solving problems, but in theory could be solved by an AI system that is normally accessible to the average skilled person, this could result in lack of inventive step. Hence, this could 'deprive' inventors of patentable inventions. This does not necessarily mean that the requirements of inventiveness are changed: for the assessment of inventive step it will still be necessary to assess whether a skilled person would have arrived at the invention in an obvious manner using any AI that a skilled person has at its disposal.

The Dutch group believes that this is an important aspect of the AI debate that would benefit from an international discussion.

19) Please indicate which industry sector views provided by in-house counsels are included in your Group's answers to Part III.

Though in-house counsels are well represented in the Dutch chapter of AIPPI, no in-house counsel member of the Dutch chapter expressed interest to participate in the Group.

Participants working group:

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