IN THE WORLD INTELLECTUAL PROPERTY ORGANIZATION

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Draft Issues Paper on Intellectual Property Policy and Artificial Intelligence

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COMMENTS BY INTEL CORPORATION

February 14, 2020

We thank the World Intellectual Property Office ("WIPO") for this opportunity to submit comments on intellectual property policy and questions with regard to artificial intelligence.

I.   COMMENTER'S INTEREST

Founded in 1968 by semiconductor pioneers Robert Noyce and Gordon Moore (of Moore's law), Intel Corporation is a world leader in the design and manufacturing of essential technologies that power the cloud and an increasingly smart, connected world. Intel is extensively involved in development of artificial intelligence ("AI") for use in computing, networking, data storage, and communications solutions to a broad set of customers spanning multiple industries. Our research spans foundational work in machine learning algorithms and computer architecture to applied research in computer vision, autonomous driving, and distributed learning systems. Intel has a significant interest in developing and promoting governance and policies that foster the continued development and growth of AI. Accordingly, Intel agrees that WIPO needs to develop an intellectual property policy that strikes the appropriate balance between the promotion of AI and the reward provided to inventors of AI. Intel has provided commentary as well as answers to some of the questions and has chosen to illustrate our points with references mostly to US law.

II.   RESPONSES TO SELECTED WIPO QUESTIONS

A.   Issue 1: Inventorship and Ownership

(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?

Intel agrees that these questions are fundamental to the policy discussion on AI and IP, and agrees that the question is correctly framed. Intel submits that the law should not permit an AI application to be named as an inventor, and that an inventor must be a human being.[1] This view is shared by adjudicatory authorities in the United States and Europe, and also by a study commissioned by the European Patent Office. In the United States, inventorship is an inherently human activity that requires forming "in the *mind* of the inventor, a definite and permanent *idea*[.]" *Hybritech Inc. v. Monoclonal Antibodies Inc.*, 802 F.2d 1367, 1376 (Fed. Cir. 1986) (emphases added). Accordingly, only a natural person can contribute to the conception of an invention. Similarly, in Europe, "the term 'inventor' refers to a natural person only." *Grounds for the EPO decision of 27 January 2020 on EP 18 275 163* at ¶ 24 (rejecting patent application naming machine as inventor). *See also id*. at 29 ("[T]he understanding that the inventor is a natural person appears to be an internationally applicable standard.").

A recent European Patent Office study is in accord with this view: "[N]ot only does the present legal position not allow for AI systems to be considered as inventors, it is submitted that at present there are no convincing reasons to consider a change in this respect." Noam Shemtov, *A Study on Inventorship in Inventions Involving AI Activity*, 33 (Feb. 2019) (commissioned by the European Patent Office) (hereinafter the "*EPO Study*").[2] This study "examine[d] the patent regime of the EPC as administered by the EPO, while also canvassing the legal position in the following eight jurisdictions: United States, China, Japan, Republic of Korea, United Kingdom, Germany, France and Switzerland," and found that "none of the relevant jurisdictions allow[ed]

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[1] *Univ. of Utah v. Max-Planck-Gesellschaft zur Forderung der Wissenschaften E.V.,* 734 F.3d 1315, 1323 (Fed. Cir. 2013) (the US inventor must be a natural person).

[2]
http://documents.epo.org/projects/babylon/eponet.nsf/0/3918F57B010A3540C125841900280653/$File/Concept_of
_Inventorship_in_Inventions_involving_AI_Activity_en.pdf (last visited November 1, 2019).

for AI systems to be considered as inventor under their patent law regimes." *EPO Study* at 5.

The study submitted that "the concept of the inventor in inventions involving AI activity should

continue to carry the same meaning as it does in relation to more traditional inventions" and

concluded that "the current legal framework, including the EPC, is suitable for addressing the

inventorship and ownership of inventions involving AI activity both at present and in the

foreseeable future." *Id*. at 7.

Intel believes it is unnecessary to disturb the well-established precedent on inventorship.

Determination of inventorship should be governed by existing laws on conception, regardless of

whether the invention involves AI or not. This is because while the patent cannot belong to the

non-human AI system, the patent could belong to the human that created the originating

invention/algorithm.

> **(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?**

Intel submits that there is no need to introduce specific legal provisions and that patent

ownership should continue to be predicated on rights that flow from one or more inventors who

are natural persons. *See supra* Section II (i). Accordingly, a company should be permitted to

own a patent involving an AI application via operation of law or assignment of rights from

human inventor(s), just as under current law.

> **(iii)   Should the law exclude from the availability of patent protection any invention that has been generated autonomously by an AI application?**

The questions appears to draw a distinction between AI used as a tool by an inventor and

inventions which are autonomously generated by AI. Intel's position is that there is no

distinction and in fact AI is just a tool. Intel submits that a more productive discussion may result from a slight reframing of this question, to focus on what is meant by "generated autonomously by an AI application". Current patent law (in most jurisdictions) deals relatively effectively with the question of inventorship where there is a clear use by a human inventor of a computer as a tool. Intel's view is that at present all AI inventions can be linked to an originating human inventor. A patented invention requires an inventor, and determination of inventorship (at least in the US) should be governed by the existing law on conception and reduction to practice, regardless of whether or not AI tools are used.

B.   Issue 2: Patentable Subject Matter and Patentability Guidelines

(i)   Should the law exclude from patent eligibility inventions that are autonomously generated by an AI application?

Please see the discussion in II.A.(iii). There should not be a distinction between AI used as a tool by an inventor and inventions which are autonomously generated by AI with respect to whether a human inventor is involved. If the question is meant to ask whether autonomously generated inventions should be (a) eligible for patent protection; and (b) subject to a different scope or duration of protection, then our answer would be (a) yes by associating the invention with the originating inventor and (b) no because all inventions should be treated similarly.

(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?

No specific provision is necessary for inventions assisted by AI. Intel believes that the existing patent eligibility considerations for software inventions in the U.S. adequately address policy objectives for AI-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.

Currently we do not see a problem that needs to be fixed.

C.   Issue 3: Inventive Step for Non-Obviousness

(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?

Intel submits that just like any other inventions, the relevant prior art should be

"analogous art" in which (1) the prior art is from the same field of endeavor as the claimed

invention; or (2) the reference is reasonably pertinent to the problem faced by the inventor. *See*

In re Bigio, 381 F.3d 1320, 1325 (Fed. Cir. 2004).

(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?

The question presumes that there is a truly autonomous invention without any relation to

a human inventor which Intel feels is incorrect (at least in the current AI environment).

Nonetheless, Intel submits that the standard of a person of ordinary skill in the art should be

maintained. However, the presence of AI tools in the process of invention may impact how

courts construe a person of ordinary skill and perform obviousness analysis. In particular, AI

tools can be expected to enhance the abilities of a person of ordinary skill in the art to develop

solutions. Courts should consider whether such person could utilize a conventional or otherwise

accessible (to a person of ordinary skill in the art) AI system to readily create an invention. If so,

that invention should be considered obvious. In addition, if a conventional AI system can

evaluate a vast number of potential solutions—larger than what has traditionally been considered

"a finite number of identified, predictable solutions," *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398

(2007)—one of ordinary skill in the art should be construed to have the ability and expectation to

try those potential solutions.

Feedback received from EPC Contracting States on "[l]egal aspects of patenting inventions involving artificial intelligence (AI)"[3] is consistent with our position. The feedback suggested "a similar understanding of AI patenting" among the Contracting States, including that: "[t]he skilled person will need to be an interdisciplinary team able to use AI."

(iii)   What implications will having an AI replacing a person skilled in the art have on the determination of the prior art base?

Intel believes that the appropriate standard is a person of ordinary skill in the art, and that the prior art base should be determined in accordance with current law.

(iv)   Should AI-generated content qualify as prior art?

Intel believes so, provided the content qualifies as prior art (for example in the US under 35 U.S.C. § 102 and applicable case law), which requires the prior art to be "publicly accessible" to a person of ordinary skill in the art prior to a legally prescribed date. *See SRI Int'l, Inc. v. Internet Sec. Sys. Inc.*, 511 F.3d 1186, 1194 (Fed. Cir. 2008).

D.   Issue 4: Disclosure

(i)   What are the issues that AI-assisted or AI-generated inventions present for the disclosure requirement?

As previously mentioned, Intel would not draw a distinction between "AI-assisted" and "AI-generated" inventions. Under US law, a patent specification should disclose enough information to demonstrate possession, enablement, and best mode of a claimed invention. *See* 35 U.S.C. § 112(a).[4] Accordingly, if a claimed invention cannot be realized with conventionally available technologies without undue experimentation, its patent application should be required

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[3] Published February 20, 2019. Available at
http://documents.epo.org/projects/babylon/eponet.nsf/0/3918F57B010A3540C125841900280653/$File/AI_inventor ship_summary_of_answers_en.pdf (hereinafter "*Feedback Summary*") (last visited November 1, 2019).
[4] 35 U.S.C. § 112(a) states, in part, "[t]he specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention."

to explain how such claimed invention can be realized. This rule should apply to AI inventions just like any other invention.

To the extent that making, using, or practicing the best mode of the invention depends on AI technology, or if the invention itself is an AI tool or method training such a tool, the disclosure (under US law) should include enough details to meet the requirements of § 112(a). Feedback from EPC Contracting States is in accord with this view, including that the "[i]nvention must be disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art"; and the "requirement of sufficiency of disclosure" needs to be enforced to "avoid 'black box' patenting." *Feedback Summary* at 6-9.

(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?

Intel recommends that the WIPO develop guidelines on adequate disclosure of inventions for which the making, using, or practicing the best mode of the invention depends on AI technology, including cases where the invention itself is an AI tool or method of training such a tool, of such inventions. In particular, AI systems can have unpredictable aspects whose results and benefits depend meaningfully on training data or initialization parameters. In the US patent applications directed to such unpredictable AI systems must provide enough disclosure to comply with the requirements of § 112(a).

(iii)   Would a system of deposit for algorithms, similar to the deposit of microorganisms, be useful?

In Intel's view, a system of deposit for algorithms would unlikely be useful and would impose a significant burden to patent applicants, particularly when the algorithms reveal more than the claimed subject matter of a patent application. Intel is concerned that such a system would unnecessarily deter patent applications directed to AI.

(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?

To the extent an AI invention cannot be made, used, or practice the best mode without knowledge of the training data, Intel submits that such data should be described in such detail so as to meet the requirements of § 112(a) of the US Patent Act. *See supra* Section II.D.(ii). The Japan Patent Office (the "JPO") has published "Case Examples pertinent to AI-related technology," providing several case studies illustrating the need for sufficient written description.[5] Notably, the JPO requires that "a certain relation such as a correlation among the multiple types of data" used as training data either be "common general technical knowledge" or be described in the patent application. *See* JPO Case Studies at 1.

(v)   Should the human expertise used to select data and to train the algorithm be required to be disclosed?

Intel submits that it is unnecessary to require disclosure of human expertise used in conceiving an invention. In Intel's view, such disclosure in the US, if any, should be determined in accordance with §112(a), which requires a demonstration of possession, enablement, and best mode of a claimed invention. The enablement requirement includes the requirement to provide enough information for a person of ordinary skill in the art to make and use the claimed invention without undue experimentation. In the case of a non-AI article of manufacture, for example, there may be no relationship between how the article is invented and how it is made/used, and therefore no need for details of any AI tool used to assist in its discovery in the application.

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[5] Available at
https://www.jpo.go.jp/e/system/laws/rule/guideline/patent/handbook_shinsa/document/index/app_z_ai-jirei_e.pdf
(the "JPO Case Studies") (last visited November 1, 2019).

E.   Issue 5: General Policy Considerations for the Patent System

(i)   Should consideration be given to a *sui generis* system of IP rights for AI-generated inventions in order to adjust innovation incentives for AI?

It is unnecessary to consider a *sui generis* system of IP rights for AI inventions. In Intel's

view, all AI inventions should be treated under the same rules of law as any other inventions,

including the requirement for conception of the invention by one or more human inventors. *See*

Hybritech, 802 F.2d at 1376.

(ii)   Is it too early to consider these questions because the impact of AI on both science and technology is still unfolding at a rapid rate and there is, at this stage, insufficient understanding of that impact or of what policy measures, if any, might be appropriate in the circumstances?

Intel shares the objective of the WIPO to explore and harmonize intellectual property

laws for adequate protection of AI innovations, and Intel believes it is never too early to do so.

Nonetheless Intel believes that, given the present state of AI technology, public policy is best

served by treating all AI inventions like any other inventions.

F.   Issue 6: Authorship and Ownership

(i)   Should copyright be attributed to original literary and artistic works that are autonomously generated by AI or should a human creator be required?

(ii)   In the event copyright can be attributed to AI-generated works, in whom should the copyright vest? Should consideration be given to according a legal personality to an AI application where it creates original works autonomously, so that the copyright would vest in the personality and the personality could be governed and sold in a manner similar to a corporation?

(iii)   Should a separate sui generis system of protection (for example, one offering a reduced term of protection and other limitations, or one treating AI-generated works as performances) be envisaged for original literary and artistic works autonomously generated by AI?

As an initial matter, Intel would respectfully note that the questions seem to mistakenly

assume that AI-generated works are regularly being produced "autonomously," without any trace

of human input or creativity and thus suggests rephrasing the question. At present, there is

always some human being contributing to the content of an AI-generated work. This is because

the AI algorithm or process can at least be traced back to the human beings who developed and

trained the AI system. As Professor Jane Ginsburg has observed, "[e]ven the most sophisticated

generative machines – those that employ adversarial neural networks to generate outputs – are no

more than complex sets of algorithmic instructions whose abilities are entirely attributable to

how programmers train them with input data, and how programmers instruct them to analyze that

input data."[6] Other scholars have made similar observations.[7] At present, virtually all AI output

will contain some modicum of human activity and/or creativity and could be copyrightable (at

least under US and certain European laws). So the question should not be whether an AI can be

an author, but rather, which human is the author of the work (stated differently, in which human

does authorship and thus copyright vest?). As such, no *sui generis* system of protection is

needed.

The law in the UK and Ireland recognizes the inevitable nexus between a human and a so-

called "autonomously" created work, because the relevant statutes specifically provide that

computer generated works *where there is no human author* are capable of copyright protection[8],

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[6] Ginsburg & L. Budiardjo, *Authors and Machines*, 34 Berkley Tech. L. J., 343, 413 (initial proof dated October 21, 2019) ("Ginsburg"), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3233885.
[7] See, e.g., Arthur R. Miller, *Copyright Protection for Computer Programs, Databases, and Computer- Generated Works: Is Anything New Since Contu?*, 106 Harv. L. Rev. 977, 1049 (1993) ("[I]t is premature to consider the status of a work of expression that is truly the product of a computer's 'mind.' Indeed, it is questionable whether that type of creation will materialize within any time-frame worth considering. Today's 'computer-generated' works still have identifiable human authors, and that will be true for the foreseeable future. Therefore, the human element in the creation of these works is sufficient to sustain their copyrightability and resolve any question of authorship."); Annemarie Bridy, *Coding Creativity: Copyright and the Artificially Intelligent Author*, 2012 Stan. Tech. L. Rev. 1, 10 (2012) ("Even though today's computers are exponentially more powerful than their early ancestors in terms of memory and processing, they still rely on humans in the first instance to dictate the rules according to which they perform. Like the photographer standing behind the camera, an intelligent programmer or team of programmers stands behind every artificially intelligent machine. People create the rules, and machines obediently follow them— doing … only whatever we order them to perform, and nothing more.").
[8] s178 Copyright, Designs and Patents Act 1988 (UK); s2 Copyright and Related Rights Act 2000 (ROI)

and the author of such works is the person who made the arrangements necessary for the creation of the work.[9] In the US, caselaw provides that the human who had the concept and executed the "lion's share of the work" is the author even if that person did not perform the final execution themselves.[10]

In addition, there is also some analogous US precedent that can guide courts as they consider whether an AI work contains sufficient human creativity (whether because of programming or training or for some other reason). For example, in *Torah Soft Ltd. V. Drosnin*,[11] the district court held that the user of a program that created a matrix of Bible code was not the author of the matrix; the user would "merely input[ ] a word or phrase" as a term, and the program then supplied "the lion's share of the creativity" in producing the resulting matrix, making the developers of the program the authors.[12] Under this reasoning, when an AI system supplies most of the creativity in a work as a result of its programming or training, the upstream human developers or trainers would likely be the authors. Conversely, where an AI system is more akin to a tool and the user of the system supplies most of the creativity in the work, it would likely be the user of the system who should be deemed the author of that work.[13]

In conclusion, it is clear "that today's machines, and those of foreseeable tomorrows, are entirely subservient to the humans who delineate their instructions and tasks. Rejecting the idea

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[9] s9(3) Copyright Designs and Patents Act 1988 (UK); s21 Copyright and Related Rights Act 2000 (ROI)

[10] See *Rearden LLC v. Walt Disney Company*, 293 F.Supp.3d 963, 969-71 (N.D. Cal. 2018) (dismissing complaint where the plaintiff's software took two dimensional camera capture of scenes involving actors and created CG output, such as the animal-like face of the Beast in *Beauty and the Beast*; in light of the creative input from the actors, the district court found the plaintiff failed to properly allege that his program did "the lion's share of the work" or that the "user's input is marginal.")

[11] 136 F. Supp. 2d 276 (S.D.N.Y. 2001).

[12] See also *Design Data Corp. v. Unigate Enter., Inc*. 847 F.3d 1169, 1173 (9th Cir. 2017) (assuming the programmer's copyright in a software program "may extend to the program's output" – making the programmer the author of that output – "if the program 'does the lion's share of the work' in creating the output and the user's role is so 'marginal' that the output reflects the program's contents").

[13] See Bruce E. Boyden, *Emergent Works*, 39 Colum. J.L. & Arts 377, 384 (2016); Ginsburg & Budiardjo, supra, at 408-11.

of "machine authorship" requires no novel twists of doctrinal logic: as long as machines follow

our instructions, they are incapable of being more than obedient agents in the service of human

principals."[14]

G.   Issue 7: Infringement and Exceptions

(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?

Intel submits that generally the proper question is "whether the use of data subsisting in

copyright works without authorization for machine learning constitutes fair use or fair dealing?"

Absent specific contractual prohibitions, those in the AI industry should be allowed to use

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[14] Ginsburg at 61.

copyrighted material for machine learning in certain cases, even if that use is motivated by a commercial purpose. To explain why, it may be helpful to contrast the fair use regime that applies in the US with the text and data mining ("TDM") provisions in the European Union's Copyright Directive.

The EU Copyright Directive's TDM provisions was an attempt to strike a balance between the rightsholders and the ability to advance commercial AI uses. However, the flexibility of the US fair use approach to TDM is better equipped to promote AI innovation because it recognizes the new use of the information.

Under the US fair use regime, however, using copyrighted material for commercial purposes may be permitted if the use is "transformative" – meaning that the use does not unfairly "supplant[] the market for the original" work and instead "add[s] something new to it, either by changing the content of the original, by providing insights into it, or by serving a different purpose" that serves copyright's goal of promoting public knowledge and creativity.[15] As the US Supreme Court noted, if the commercial nature of a use were given "virtually dispositive weight," then most classic examples of fair use like "news reporting, comment, [and] criticism" might not be excused, since they "are generally conducted for profit."[16] To avoid this result, and to ensure that second-comers can fairly use copyrighted material in new and innovative ways, more attention is given to whether a use is "transformative." Moreover, when a use is transformative, the for-profit nature of the undertaking is usually given less significance in the analysis.[17]

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[15] Patry on Fair Use § 3:9.
[16] *Campbell v. Acuff-Rose Music, Inc*., 510 U.S. 569, 584 (1994).
[17] See id. at 579 ("[T]he more transformative the new work, the less will be the significance of other factors, like commercialism, that may weigh against a finding of fair use."); see also *SOFA Entm't, Inc. v. Dodger Prods., Inc*., 709 F.3d 1273, 1278–79 (9th Cir. 2013) (finding the commercial nature of the use "of little significance" because the defendant's use of the material was "transformative").

Under analogous fair use precedents in the US, absent contractual obligations, using copyrighted material for machine learning is generally deemed a fair use – even if the use of that copyrighted material is motivated by a commercial purpose. One analogous case on this point is *Authors Guild v. Google, Inc.*[18] There, the Second Circuit analyzed the relevant fair use factors and held it was fair use for Google to make a digital copy of millions of books for the purpose of creating a "full-text searchable database" that could be used by researchers to obtain information about the works.[19] The first fair use factor, the purpose and character of the use, weighed in favor of fair use: Although Google's use was commercial, copying the works for the purpose of making the reference tool was a "transformative use" of those works contributing to public knowledge and was "different in purpose, character, expression, meaning, and message."[20] The second fair use factor, the nature of the work, was not found to weigh against fair use, since Google was using the works for their factual content, rather than for their creativity.[21] The third fair use factor, the amount and importance of the material copied, also weighed in favor of fair use: Although Google copied the entirety of the works, this was "necessary" to achieve Google's transformative use and enable its search function.[22] The fourth fair use factor, the effect of the use on the market for the works, also weighed in favor of fair use: Copying the works to create the database did not serve as a substitute for the authors' works themselves, nor did the "snippet" view provided to users of the database.[23] The court also rejected the notion that Google's use harmed the copyright owner's market for derivative works, reasoning there was no derivative

[18] 804 F. 3d 202 (2d Cir. 2015).
[19] Id. at 216-17.
[20] Id. at 217.
[21] Id. at 220.
[22] Id. at 221.
[23] Id. at 223.

"right to supply information about [the] work[s] of the sort communicated by Google's search functions."[24]

Another analogous case in the US adopting similar reasoning is Judge Rakoff's decision in *White v. West Publishing Corp*.[25] There, a database consisting of legal briefs was created by West. West's clients used the database to explore how particular legal issues or factual situations had been addressed in briefs in the past, allowing them to develop legal arguments and locate authorities for their own cases or research. Judge Rakoff found West's use of the briefs to be fair. West's use was transformative, i.e., created for a purpose different than the one envisioned by the authors of the briefs. Moreover, West added something new, by creating an interactive tool. Given that the briefs were "functional presentations of fact and law," the briefs were at the lower end of the creativity scale. Even though the entire briefs were copied, this amount of copying was necessary for the transformative purpose of West's use. Finally, West's use did not harm the market for the works, since it did not serve as substitute for the original work, and there was no lost licensing revenue in light of the prohibitive transactional costs in licensing attorney works.

The reasoning of these and other cases[26] supports the conclusion that if the use of the work is transformative, the large-scale copying needed for non-expressive AI processes, including machine learning, should be fair use under US law.[27] Copying copyrighted works to create training sets for machine learning – though motivated by commercial interests – is a highly transformative use of those works, contributing to public knowledge and innovation in the

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[24] Id. at 226.
[25] 29 F.Supp.3d 396 (S.D.N.Y. 2014).
[26] See, e.g., *Authors Guild v. HathiTrust*, 755 F.3d 87 (2d. Cir. 2014); *Kelly v. Arriba Soft Corp.*, 336 F.3d 811 (9th Cir. 2003); *Perfect 10, Inc. v. Amazon*, 508 F.2d 1146 (9th Cir. 2007).
[27] Intel believes this necessarily holds true for TDM. As more than a few scholars have noted, "TDM is … an inherent part of [AI] research using machine learning." M. Sag, *The New Legal Landscape for Text Mining and Machine Learning*, Journal of the Copyright Society of the USA, Vol 66, at 7 (2019).

field of AI. Moreover, these works are often being copied for their informational content for training purposes, and not to unfairly exploit the creative elements that lie at the heart of copyright protection. Copying the works for this transformative purpose also does not serve as a substitute for the original works or otherwise harm the copyright owners' markets for those works. Finally, the transactional costs of requiring AI developers to obtain a license from thousands of copyright owners whose works in a large photographic database might be infringed would be prohibitive, and would seriously chill (if not threaten) AI innovation.[28] Nonetheless, a licensor of copyrighted works is still free to use contract to control use of its works by licensees.

H.   **Issue 10: Further Rights in Relation to Data**

(i)   Should IP policy consider the creation of new rights in relation to data or are current IP rights, unfair competition laws and similar protection regimes, contractual arrangements and technological measures sufficient to protect data?

(ii)   If new IP rights were to be considered for data, what types of data would be the subject of protection?

(iii)   If new IP rights were to be considered for data, what would be the policy reasons for considering the creation of any such rights?

(iv)   If new IP rights were to be considered for data, what IP rights would be appropriate, exclusive rights or rights of remuneration or both?

(v)   Would any new rights be based on the inherent qualities of data (such as its commercial value) or on protection against certain forms of competition or activity in relation to certain classes of data that are deemed to be inappropriate or unfair, or on both?

(vi)   How would any such rights affect the free flow of data that may be necessary for the improvement of AI, science, technology or business applications of AI?

(vii)   How would any new IP rights affect or interact with other policy frameworks in relation to data, such as privacy or security?

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[28] As question (v) recognizes, requiring AI developers or users to obtain a license from a very large number of copyright holders would likely be so impractical that some form of policy or legal intervention may be required to make that feat possible.

(viii)   How would any new IP rights be effectively enforced?

The current IP regime, in conjunction with contract law and anti-competition law, in the

US and in Europe is adequate to further the advancement of AI innovation.[29] No new IP rights

are necessary. Intel believes that, given the present state of AI technology, addition of new IP

rights for data may complicate and chill the development of AI technology. Public policy is best

served by a single framework of intellectual property rights for both AI and non-AI inventions

and data. Furthermore, the use of contract for access, use, and transfer of data is a commonly

accepted approach and is adequate to protect investment by data producers. Also, the use of trade

secret law and technological protection measures to ensure secrecy and protection (where

appropriate) gives the parties to AI contracts further protections and fills in any potential gaps in

other IP law related to data.

     I.   Issue 11: Authorship and Ownership

(i)   Should the law permit or require that design protection be accorded to an original design that has been produced autonomously by an AI application? If a human designer is required, should the law give indications of the way in which the human designer 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 authorship?

(ii)   Do specific legal provisions need to be introduced to govern the ownership of autonomously generated AI designs, or should ownership follow from authorship and any relevant private arrangements, such as corporate policy, concerning attribution of authorship and ownership?

In the current technological environment, inventions and products can be associated with

a human inventor and/or author. Thus there is no current need to create new design protection

laws since there should be sufficient human involvement at some level and design law already

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[29] Note that Intel does not address all of the questions since we are of the view that new IP rights in data are not necessary.

attributes authorship and inventorship sufficiently well given this framework. Furthermore, at

present, ownership issues are generally addressed via contractual arrangements.

J.   Issue 13: Accountability for Decisions in IP Administration

(i)   Should any policy or practical measures be taken to ensure accountability for decisions made in the prosecution and administration of IP applications where those decisions are taken by AI applications (for example, the encouragement of transparency with respect to the use of AI and in relation to the technology used)?

 Transparency on search methodology should continue to be a goal, but no specific

changes appear necessary at this time.

(ii)   Do any legislative changes need to be envisaged to facilitate decision-making by AI applications (for example, reviewing legislative provisions on powers and discretions of certain designated officials)?

At present, there does not seem to be a need for legislation with regard to AI from the

intellectual property viewpoint.