Response Document to WIPO's Draft Issue Paper on Intellectual Property and Artificial Intelligence

By

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Review & Response Methodology

Each of the issues and questions listed by WIPO have been closely reviewed by TCS against three dimensions, namely:

1. **IP Policy**: Is there a gap in current IP policy that limits adequate protection for AI-assisted or AI-generated intellectual property?

2. **IP Administration**: Is there a gap in current IP administration processes that limits adequate protection for AI-assisted or AI-generated intellectual property?

3. **Collaboration (among jurisdictions)**: Is there a gap in current IP collaboration among jurisdictions that limits consistency and synergy in protection for AI-assisted or AI-generated intellectual property?

Based on our evaluation and experience, we have tried to gauge the possibility of impact these WIPO questions can have on - IP Policy, IP Administration, and Collaboration (amongst various jurisdictions). We have also provided an indication for Implementation Complexity.

In addition, we have supplemented the WIPO paper with few additional set of questions, which are important and can be considered for this conversation on AI and IP. These questions have been identified as "New Question from TCS" towards the end of respective issue section.

TCS Response Structure in the Document

Our response for each WIPO question is structured as follows:

- Issue #, Issue name and Question # as per WIPO nomenclature
- Actual WIPO questions
- TCS Response as per above review methodology, and TCS comments (if any). (Note: New questions added by TCS is in blue color.)

Legends used in the response document

Area of Impact	
Impact on Policy Change	There a gap in current IP policy that limits adequate protection for AI-assisted or AI-generated intellectual property
Impact on IP Administration	There a gap in current IP administration processes that limits adequate protection for AI-assisted or AI-generated intellectual property
Impact on Collaboration (among jurisdiction)	There a gap in current IP collaboration among jurisdictions that limits consistency and synergy in protection for AI-assisted or AI-generated intellectual property

Implementation Complexity					
	High		Medium		Low

TCS Response to WIPO's Draft Issue Paper on Intellectual Property and Artificial Intelligence

Issue #: 1 | Inventorship and Ownership | Question #: 7 (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?

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
Implementation Complexity

TCS Comments: No Comments

Issue #: 1 | Inventorship and Ownership | Question #: 7 (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?

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
Implementation Complexity

TCS Comments: No Comments

Issue #: 1 | Inventorship and Ownership | Question #: 7 (iii)

Should the law exclude from the availability of patent protection any invention that has been generated autonomously by an AI application? See also Issue 2-Q8 (i), below

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
Implementation Complexity

TCS Comments: No Comments

Issue #: 1 | Inventorship and Ownership | Question #: New Question from TCS

If AI system is named as an inventor or co-inventor, how differently will the lack of unity of the patent be addressed (if detected at later stage)?

Impact Area:

☐ Impact on IP Policy
☑ Impact on IP Administration
☐ Impact on Collaboration (among jurisdictions)
Implementation Complexity

Additional Remark: To elaborate, if one claim of an application, heavily dependent on AI generates something beyond the scope of invention, that may lead to entirely a different invention, how could be the dispute of inventorship and lack of unity be resolved for that particular claim.

Issue #: 2 | Patentable Subject Matter | Question #: 8 (i)

Should the law exclude from patent eligibility inventions that are autonomously generated by an AI application? See also Issue 1-Q7 (iii), above.

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
Implementation Complexity

TCS Comments: No Comments

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Issue #: 2 | Patentable Subject Matter | Question #: 8 (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?

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☐ Impact on Collaboration (among jurisdictions)
Implementation Complexity

TCS Comments: The provisions may further differ depending on whether the invention is an AI technique or an AI application (i.e. core v/s applied AI)

Issue #: 2 | Patentable Subject Matter | Question #: 8 (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.

TCS Response:

☐Impact on IP Policy
☑ Impact on IP Administration
☐Impact on Collaboration (among jurisdictions)
Implementation Complexity

TCS Comments: The examination guidelines may further differ depending on whether the invention is an AI technique or an AI application (i.e. core v/s applied AI)

Issue #: 2 | Patentable Subject Matter | Question #: New Question from TCS

Which parts of an AI invention can be considered as inventive in nature and hence be patent eligible?

Impact Area:

☑ Impact on IP Policy
☑ Impact on IP Administration
☐ Impact on Collaboration (among jurisdictions)
Implementation Complexity

Additional Remark: a) learning algorithm; b) training data structure; c) training data content; d) training data pre/post processing; d) training process; e) hyper-parameter setup; f) trained model

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Issue #: 2 | Patentable Subject Matter | Question #: New Question from TCS

Is a method of generating training data that feeds into an AI algorithm patent eligible? If so, how differently be it examined in comparison AI technique or computer related inventions (CRI)?

Impact Area:

☑ Impact on IP Policy
☑ Impact on IP Administration
☐ Impact on Collaboration (among jurisdictions)
Implementation Complexity

Additional Remark: No additional remark

Issue #: 2 | Patentable Subject Matter | Question #: New Question from TCS

How to identify if an invention belongs to AI Technique or AI Application or AI assisted invention, before applying eligibility test for such inventions?

Impact Area:

☐ Impact on IP Policy
☑ Impact on IP Administration
☐ Impact on Collaboration (among jurisdictions)
Implementation Complexity

Additional Remark: No additional remark

Issue #: 3 | Inventive Step or Non-Obviousness | Question #: 9 (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?

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
Implementation Complexity

TCS Comments: No Comments

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Issue #: 3 | Inventive Step or Non-Obviousness | Question #: 9 (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?

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
▬ Implementation Complexity

TCS Comments: No Comments

Issue #: 3 | Inventive Step or Non-Obviousness | Question #: 9 (iii)

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

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
▬ Implementation Complexity

TCS Comments: No Comments

Issue #: 3 | Inventive Step or Non-Obviousness | Question #: 9 (iv)

Should AI-generated content qualify as prior art?

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
▬ Implementation Complexity

TCS Comments: No Comments

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Issue #: 3 | Inventive Step or Non-Obviousness | Question #: New Question from TCS

For examining novelty of invention, is it necessary to extend the scope and content of "prior art" beyond human creation and to include AI generated invention and creation?

Impact Area:
☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
▬ Implementation Complexity

Additional Remark: No additional remark

Issue #: 4 | Disclosure | Question #: 10 (i)

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

TCS Response:
☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
▬ Implementation Complexity

TCS Comments: No additional remark

Issue #: 4 | Disclosure | Question #: 10 (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?

TCS Response:
☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
▬ Implementation Complexity

TCS Comments: Algorithms do not change over time. The trained models change over time with access to more and more data.

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Issue #: 4 | Disclosure | Question #: 10 (iii)

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

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
Implementation Complexity

TCS Comments: Instead of having "deposit of algorithms", it is more appropriate to have "deposit of models".

Issue #: 4 | Disclosure | Question #: 10 (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?

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
Implementation Complexity

TCS Comments: Instead of saying "the data used to train an algorithm", it is more appropriate to say "the data used to train a model (by using a learning algorithm)"

Issue #: 4 | Disclosure | Question #: 10 (v)

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

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
Implementation Complexity

TCS Comments: No Comments

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Issue #: 4 | Disclosure | Question #: New Question from TCS

How sufficiency and adequacy of disclosure be evaluated as assessed or understanding how exactly an AI invention gets to its end results is problematic due to heuristic and probabilistic nature of AI (i.e. AI blackbox)?

Impact Area:

☐ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
Implementation Complexity

Additional Remark: No additional remark

Issue #: 4 | Disclosure | Question #: New Question from TCS

What changes in enablement requirements are needed to address heuristic (and probabilistic) behavior in AI invention?

Impact Area:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
Implementation Complexity

Additional Remark: e.g. potential non-predictability and non-repeatability in a) training process, and b) trained model?

Issue #: 4 | Disclosure | Question #: New Question from TCS

a) To what extent can a broader claim covering a wider purpose (or scope) of an AI invention get patent protection? or

b) To what extent can a narrow claim covering a specific purpose (and scope) get patent protection for an AI invention without limiting the commercial interest in its broader applicability?

Impact Area:

☐ Impact on IP Policy
☑ Impact on IP Administration
☐ Impact on Collaboration (among jurisdictions)
Implementation Complexity

Additional Remark: No additional remark

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Issue #: 4 | Enforcement | Question #: New Question from TCS

In absence of human inventor, how the act of infringement by (or on-behalf-of) an AI-generated invention be detected and established to ascertain whether the Patentee rights has been infringed upon?

Impact Area:

☑ Impact on IP Policy
☑ Impact on IP Administration
☐ Impact on Collaboration (among jurisdictions)
Implementation Complexity

Additional Remark: No additional remark

Issue #: 4 | Enforcement | Question #: New Question from TCS

In absence of human inventor, how the accountability for any damage caused by an AI-generated invention be established?

Impact Area:

☑ Impact on IP Policy
☑ Impact on IP Administration
☐ Impact on Collaboration (among jurisdictions)
Implementation Complexity

Additional Remark: No additional remark

Issue #: 5 | General | Question #: 11 (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?

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
Implementation Complexity

TCS Comments: No Comments

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Issue #: 5 | General | Question #: 11 (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?

TCS Response:

☐Impact on IP Policy
☐Impact on IP Administration
☐Impact on Collaboration (among jurisdictions)

TCS Comments: No Impact

Issue #: 5 | General | Question #: New Question from TCS

Can AI patent examination be accelerated and scaled to handle cater to the increasing number of AI patent applications? E.g. grant patent for AI Inventions within six months from the date of filing.

Impact Area:

☐ Impact on IP Policy
☑ Impact on IP Administration
☐ Impact on Collaboration (among jurisdictions)
Implementation Complexity

Additional Remark: No additional remark.

Issue #: 5 | General | Question #: New Question from TCS

How does having a machine or an AI system as a sole inventor help support the fundamental objective of Patent system, which is to perpetuate the advancement of Science and Technology through granting of Patent rights to the human inventors.

Impact Area:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
Implementation Complexity

Additional Remark: No additional remark.

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Issue #: 6 | Authorship and Ownership (of copyrighted works) | Question #: 12 (i)

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

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
▬ Implementation Complexity

TCS Comments: No Comments.

Issue #: 6 | Authorship and Ownership (of copyrighted works) | Question #: 12 (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?

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
▬ Implementation Complexity

TCS Comments: No Comments.

Issue #: 6 |Authorship and Ownership (of copyrighted works) | Question #: 12 (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?

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
▬ Implementation Complexity

TCS Comments: No Comments.

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Issue #: 7 | Infringement and Exceptions (for copyrighted works) | Question #: 13 (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?

TCS Response:
☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
▬ Implementation Complexity

TCS Comments: No Comments.

Issue #: 7 | Infringement and Exceptions (for copyrighted works) | Question #: 13 (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?

TCS Response:
☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
▬ Implementation Complexity

TCS Comments: No Comments.

Issue #: 7 | Infringement and Exceptions (for copyrighted works) | Question #: 13 (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?

TCS Response:
☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)

TCS Comments: No Comments.

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Issue #: 7 | Infringement and Exceptions (for copyrighted works) | Question #: 13 (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?

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
▭ Implementation Complexity

TCS Comments: This question is not clear as to which existing exceptions it is referring to.

Issue #: 7 | Infringement and Exceptions (for copyrighted works) | Question #: 13 (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?

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
▭ Implementation Complexity

TCS Comments: As license can be given only for authorized data, for unauthorized data policy changes should be necessary.

Issue #: 7 | Infringement and Exceptions (for copyrighted works) | Question #: 13 (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?

TCS Response:

☐Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
▬ Implementation Complexity

TCS Comments: Detecting any type of infringement for AI related copyright work is a challenge. So, why is this question specific to unauthorized use of data? It could be generalized to addressing the current challenges concerning detection of infringement in AI related copyright work.

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Issue #: 8 | Deep Fakes | Question #: 15 (i)

Since deep fakes are created on the basis of data that may be the subject of copyright, to whom should the copyright in a deep fake belong? Should there be a system of equitable remuneration for persons whose likenesses and "performances" are used in a deep fake?

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
▬ Implementation Complexity

TCS Comments: No Comments.

Issue #: 8 |Deep Fakes | Question #: New Question from TCS

Should Deep Fakes be copyright eligible or non-eligible (especially when their exploitation could endanger the society and economy)? Do they fall under ethical use of technology?

Impact Area:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
▬ Implementation Complexity

Additional Remark: No additional remark.

Issue #: 9 | General Policy Issues (for copyrighted works) | Question #: 16 (i)

Are there seen or unforeseen consequences of copyright on bias in AI applications? Or is there a hierarchy of social policies that needs to be envisaged that would promote the preservation of the copyright system and the dignity of human creation over the encouragement of innovation in AI, or vice versa?

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
▬ Implementation Complexity

TCS Comments: No Comments.

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Issue #: 9 | General Policy Issues (for copyrighted works) | Question #: New Question from TCS

Can the copyrighting process in a jurisdiction be scaled to cater to the increasing number of AI generated (and even AI assisted) creative works?

Impact Area:

☐ Impact on IP Policy
☑ Impact on IP Administration
☐ Impact on Collaboration (among jurisdictions)
Implementation Complexity

Additional Remark: No additional remark.

Issue #: 10 | Further Rights in Relation to Data | Question #: 23 (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?

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
Implementation Complexity

TCS Comments: No Comments.

Issue #: 10 | Further Rights in Relation to Data | Question #: 23 (ii)

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

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
Implementation Complexity

TCS Comments: No Comments.

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Issue #: 10 | Further Rights in Relation to Data | Question #: 23 (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?

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
Implementation Complexity

TCS Comments: No Comments.

Issue #: 10 | Further Rights in Relation to Data | Question #: 23 (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?

TCS Response:

☑ Impact on IP Policy
☐ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
Implementation Complexity

TCS Comments: All IP Rights are exclusionary and monopolistic rights, with privileges for the right holder to seek monetary or remunerative benefits. How can this be an exception for IP rights consider for "Data".

Issue #: 10 | Further Rights in Relation to Data | Question #: 23 (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?

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
Implementation Complexity

TCS Comments: No Comments.

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Issue #: 10 | Further Rights in Relation to Data | Question #: 23 (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?

TCS Response:

☑ Impact on IP Policy
☐ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
Implementation Complexity

TCS Comments: No Comments.

Issue #: 10 | Further Rights in Relation to Data | Question #: 23 (vii)

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

TCS Response:

☑ Impact on IP Policy
☐ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
Implementation Complexity

TCS Comments: No Comments.

Issue #: 10 | Further Rights in Relation to Data | Question #: 23 (viii)

How would any new IP rights be effectively enforced?

TCS Response:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
Implementation Complexity

TCS Comments: No Comments.

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Issue #: 10 | Further Rights in Relation to Data | Question #: New Question from TCS

How does an examiner verify the originality and ownership of the training dataset utilized in an AI invention? i.e. whether the use of such dataset for training purposes is legally acquired by the inventor? What are the Procedural Changes, Checks, Clearances to be obtained from the inventors?

Impact Area:

☐Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
Implementation Complexity

Additional Remark: What data is sourced by the AI system, the legal implications of using the data? The ambiguity has to be addressed.

Issue #: 10 | Further Rights in Relation to Data | Question #: New Question from TCS

How can the exclusivity of the training dataset be established before patenting an AI invention?

Impact Area:

☑ Impact on IP Policy
☑ Impact on IP Administration
☑ Impact on Collaboration (among jurisdictions)
Implementation Complexity

Additional Remark: Many of the Countries today do not have Data Exclusivity which is TRIPS + Provision, Considering the nature of AI Inventions, Data Protection alone may not suffice because a lot of Critical data which will be based on extensive research will be published along with the Patent Application.

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