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**SCP/35/8**  
**ORIGINAL: ENGLISH**  
**DATE: AUGUST 1, 2023**

## **Standing Committee on the Law of Patents**

**Thirty-Fifth Session**  
**Geneva, October 16 to 20, 2023**

### **REPORT OF THE SHARING SESSION ON THE PATENTABILITY OF INVENTIONS USING ARTIFICIAL INTELLIGENCE AND BY ARTIFICIAL INTELLIGENCE**

*Document prepared by the Secretariat*

1. Pursuant to the decision of the Standing Committee on the Law of Patents (SCP) at its thirty-fourth session, held in Geneva from September 26 to 30, 2022, the present document contains a report of the sharing session, held on September 26 and 27, 2022, on the patentability of inventions using artificial intelligence (AI) and by AI.<sup>1</sup>

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<sup>1</sup> Presentations made during the sharing session are available at: [https://www.wipo.int/meetings/en/details.jsp?meeting\\_id=69690](https://www.wipo.int/meetings/en/details.jsp?meeting_id=69690). Webcasting and automatically generated WIPO Speech-to-Text transcripts of the sharing session are available at: [https://webcast.wipo.int/video/SCP\\_34\\_2022-09-26\\_PM\\_116738](https://webcast.wipo.int/video/SCP_34_2022-09-26_PM_116738) and: [https://webcast.wipo.int/video/SCP\\_34\\_2022-09-27\\_AM\\_116762](https://webcast.wipo.int/video/SCP_34_2022-09-27_AM_116762).

## Presentations

### Delegation of the United Kingdom

2. The UK IPO called for views on AI and IP in September 2020 regarding the questions that AI posed for intellectual property (IP) law and the impacts of IP law for AI. Following that Call for Views, the UK IPO held consultations on some issues that might suggest legal changes. The outcome of the consultation “Artificial Intelligence and IP: copyright and patents” was published in October 2021.

3. As a main conclusion of the Call for Views relating to patents and AI, there was a general consensus that the present UK legal framework could meet future challenges, and that AI itself should not own IPRs. However, during the consultation, the UK Government acknowledged that there was a question as to whether the law should be amended so that if AI qualified as an inventor, IP rights may be granted on its inventions. Therefore, the following four policy options were presented: (i) no legal change; (ii) expanding inventorship to humans responsible for an AI system; (iii) allowing patent applications to identify AI as an inventor; and (iv) implementing a *sui-generis* protection for AI-devised inventions. The majority of respondents were in favor of option (i). They saw no need for a legal change, since AI still involved a significant human intervention, and was mainly used as a tool. In addition, respondents noted that any unilateral (legislative) approach to AI inventorship would make global patent filing strategies more difficult. On a more general note, the respondents observed that applicants who filed patent applications claiming AI-related inventions needed more legal certainty, since the UK patent law listed a number of exclusions from patentable subject matter (such as exclusions of computer programs or mathematical methods). In that regard, the UK Government published enhanced guidance, which aimed to provide more certainty for the applicants.

### Delegation of Brazil

4. The Brazilian National Institute of Industrial Property (INPI) prepared technical reports relating to AI, such as the “Technological Radar” and the “IP data & facts: AI in machines and equipment”, which provide, amongst others, statistics concerning the amount of AI-related patent applications. INPI also updated the Guidelines for Examining Patent Applications Involving Computer-Implemented Inventions (CIIs) in 2020, and included a paragraph stating that AI techniques, such as machine learning and deep learning tools, can be considered an invention if applied to solve technical problems. Further, in the field of AI, INPI collaborated with national stakeholders (the Brazilian Development Agency and the Ministry of Economy) and with other IP Offices and International Organizations (such as the Danish Patent Office, the European Patent Office (EPO) and WIPO).

5. In the patent granting process, INPI used AI in the determination of the technical division for classifying a patent application, and to carry out a prior art search for patent applications in the area of chemistry.

6. In the context of substantive examination, INPI categorized AI-related inventions into the following two groups: (i) AI-generated inventions, which refer to inventions that use AI to obtain a technical solution during the invention development process, but do not necessarily include AI in the claimed subject matter; and (ii) AI-applied inventions, which contain AI as a part of the claimed subject matter. In the context of AI-generated inventions, INPI pointed out that it was not possible to indicate an AI as an inventor in a patent application in Brazil. In addition, INPI had to date not identified a need to update the Examination Guidelines with regard to patent applications claiming AI-generated inventions. INPI explained the critical points in the context of AI-applied applications when examining eligible subject matter, inventive step and sufficiency of disclosure.

## Delegation of Japan

7. The Japan Patent Office (JPO) published “Recent Trends in AI-related Inventions” (August 2021). In that publication, two subgroups of AI related inventions were established. Firstly, “AI-core inventions” defined inventions characterized by mathematical or statistical information processing technology that formed the basis of AI, such as various machine learning methods, including neural networks, deep learning, and support vector machines. Secondly, “AI-applied inventions” referred to inventions characterized by applying the AI-core inventions to various technical fields, such as image processing, speech processing and device control/robotics. The patent filing statistics showed a third boom on the AI-related inventions (which includes both subgroups) in 2019.

8. The JPO also published case examples regarding the examination of AI-related technologies, with the aim to provide a clear understanding of the decisions made in the examination process. In addition, in January 2021, the JPO established a team that supported the examination of AI-related inventions. The team members collaborated beyond their responsible technical fields collected and shared knowledge on, amongst others, the latest AI-related technologies and case examples of examination results. Furthermore, examination guidelines in Manga-form, which showed the basic concept of examination standards relating to AI and IoT-related technologies, were published in April 2021 in Japanese, and in October 2021 in English.

9. As to the question of AI as an inventor, the JPO stressed that the term “inventor” under the Japanese Patent Act was interpreted to be limited to a natural person.

## Delegation of France

10. The French Intellectual Property Office (INPI) defined AI as a set of theories and techniques used to produce computer programs, computational models and algorithms to enable machines to reproduce a form of intelligence.

11. Additionally, INPI shared statistics showing an exponential increase of AI-related patent families between 2000 and 2020 worldwide and in France in particular. By mapping the patent applications related to AI to particular sectors, INPI noted that AI had an impact on all technological spheres. The areas of the most patent applications relating to AI were either applications that related directly to AI (for example, neural networks, learning models and search engines) or indirectly, whereby AI techniques were, for example, used in vehicles or medical equipment. INPI decentralized AI expertise into all examination divisions. Further, INPI established a taskforce related to AI that monitored case law and engaged in discussions with other IP offices and stakeholders.

12. Furthermore, INPI updated the Examination Guidelines on CII. As to patentability of AI-related inventions, the Examination Guidelines clarified that a mathematical method as such, for example an “artificial neural network”, was not sufficient in itself to confer a technical character.

13. Further, the implementation of the PACTE (“*Plan d'action pour la croissance et la transformation des entreprises*”) law in 2020, which introduced, amongst others, the examination of inventive step in the patent examination procedure and created a new opposition procedure including sufficiency of disclosure as a ground for opposition, was considered particularly relevant to AI-related inventions. According to the Delegation, the legal aspects especially relevant to AI-related inventions were in the areas of inventive step and sufficiency of disclosure. For example, the definition of a person skilled in the art in the field of AI raised the question as to whether the person skilled in the art may be a team of a specialist of the technical field and an AI. In relation to sufficiency of disclosure, the “black box” phenomenon was described as one point of concern.

## Delegation of Switzerland

14. The Delegation of Switzerland gave an overview of different use cases of AI, such as machine learning and data management and strategies. During a series of workshops on AI and IP organized by the Swiss Intellectual Property Office and the University of Zurich, experts stressed that AI could discover more prior art relevant to a patent application under examination than a human being, could formulate new working hypotheses, and had a major impact on scientific methodology and work in laboratories.

15. Challenges for the current patent law and AI-related patent applications were seen, for example, in the definition of the skilled person in AI-related inventions, the sufficiency of disclosure of AI-related inventions, and the question of AI-inventorship. In that context, the Delegation gave a summary of the Artificial Inventor Project – DABUS<sup>2</sup>.

16. Against this background, the Delegation proposed that the Secretariat: (i) prepare a paper for SCP/35 on how jurisdictions around the world address the issue of AI-inventorship, both through case law and legislation; and (ii) invite a technical expert to SCP/35, who will brief the SCP about to what extent AI technology is already capable of generating inventions.

## Statements made from the floor

### Delegation of Germany

17. The Delegation of Germany, speaking on behalf of Group B, expressed its appreciation for the interesting presentations, and supported the proposal made by the Delegation of Switzerland.

### Delegation of Brazil

18. The Delegation of Brazil, speaking on behalf of the Group of Latin American and Caribbean Countries (GRULAC) stated that the use of AI as a tool harmonized and simplified the patent examination process, and provided great opportunities in particular for developing countries. Consequently, the Delegation encouraged further sharing of experiences and tools. In general, the discussions on AI and IP in the SCP were considered to be very important. The Delegation therefore welcomed the proposal of the Delegation of Switzerland, although it requested circulation of the proposal for its further consideration.

### Delegation of the Republic of Korea

19. Regarding the patentability of AI-related inventions, the 2021 Examination Guidelines published by the Korean Intellectual Property Office (KIPO) contained basic principles and case studies, especially focusing on the issues in connection with, for example, inventive step, the eligibility and the description requirement in the field of AI-related inventions. Furthermore, KIPO and the EPO published a comparative study in the field of CII and software-related inventions in 2021, which provided applicants and practitioners with insights into each Office's examination practices in that field. In addition, KIPO published the results of discussions with AI experts in an IP White Paper. Furthermore, in 2021, KIPO hosted an international conference on the topic of AI inventorship.

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<sup>2</sup> A project created by Mr. Thaler that includes a series of *pro bono* legal test cases seeking intellectual property rights for AI-generated output in the absence of a traditional human inventor or author. See with further information: <https://artificialinventor.com/>.

#### Delegation of Pakistan

20. Challenges with AI-related inventions were perceived, amongst others, in the areas of sufficiency of disclosure, and the use of technical terms in the patent description. Therefore, the Delegation considered further discussion on AI-related inventions in the SCP important, and looked forward to the inclusion of AI-related agenda items, such as the one proposed by the Delegation of Switzerland.

#### Delegation of Algeria

21. The Delegation of Algeria, speaking on behalf of the African Group, wanted to deepen their understanding of topical issues, such as the patentability of AI-related inventions. In view of achieving a balanced program for future work of the SCP, the African Group was open to discuss the proposal of the Delegation of Switzerland and other agenda items with other delegations.

#### Delegation of Spain

22. The Delegation of Spain recalled that it had shared, during the previous SCP sessions, information gained from a working group established in the Spanish Patent and Trademark Office (OEPM), which had been looking into questions particularly relating to AI and patent protection and to the use of AI in patent procedures. The OEPM considered the use of AI-tools in their examination practice as very beneficial. Further, while AI-related inventions were seen as a particular form of CII, for AI-related inventions, it would be necessary to consider whether they are obvious to a person skilled in the art who uses AI tools. The Delegation supported further discussion on the topic of AI-inventorship, although it perceived the discussion to be of an academic nature as long as AI still required substantive contribution of a human being. Due to such necessity of human contribution, the Delegation was confident that it should be rather easy to identify a human inventor and establish common ground. The Delegation, however, was convinced that the discussion on AI inventorship would gain practical relevance in the future when AI will be able to work autonomously.

#### Delegation of Monaco

23. The Delegation of Monaco thanked for the interesting presentations and supported the proposal of the Delegation of Switzerland.

#### Delegation of Singapore

24. The Delegation of Singapore emphasized the importance of understanding, examining and determining the interplay between the increase of AI-generated inventions and the existing legal frameworks. The Delegation therefore appreciated the interesting discussions at the sixth session of the WIPO Conversation on IP and Frontier Technologies, and supported further exchange relating to AI and IP in general, and patents in particular, in the different fora of WIPO. The Delegation further elaborated on the related activities of IPOS. For example, the Center for AI and Digital Governance (CADG) supported by the Intellectual Property Office of Singapore (IPOS) and the Infocomm Media Development Authority of Singapore (IMDA) conducted a research project on IP and the AI interface. In addition, IPOS concluded a broad jurisdictional review of AI-related issues, including AI inventorship.

#### Delegation of Slovakia

25. The Delegation of Slovakia, speaking on behalf of the Central European and Baltic States Group (CEBS Group), expressed its interest in focusing on quality of patents and

especially on AI under the agenda item “Quality of Patents, including Opposition Systems”. The CEBS Group thanked the Delegation of Switzerland and expressed its support for the Swiss proposal.

#### Delegation of Germany

26. Regarding the procedure and outcome of the German patent applications naming the AI DABUS as an inventor, the Federal Patent Court had confirmed that, under German patent law, only natural persons could be designated as inventors. The decision was under appeal at the Federal Court of Justice.

#### Delegation of Chile

27. The Delegation of Chile informed the Committee that the Examination Guidelines (version 2022) were published. It aimed, *inter alia*, to clarify the criteria for the patentability of CII and AI-related inventions.

#### Delegation of the Russian Federation

28. The Delegation of the Russian Federation explained that currently, an inventor must be a human being under the Russian patent law. As to improving the approach of assessing the patentability of inventions relating to emerging technologies such as AI and blockchain, a working group, including specialists from patent offices and business entities, was established. In addition, the Federal Service for Intellectual Property (Rospatent) used a broad range of AI and new technologies for prior art search and assessment of patent classification, among others.

#### Delegation of Australia

29. Relating to the patent applications naming the AI DABUS as an inventor, the Full Federal Court of Australia decided that an AI could not be named as an inventor. That decision overturned the previous decision of a single judge of the Federal Court of Australia, who had ruled that an AI system could be named as an inventor in a patent application in Australia. Further, Australia has been exploring policy options at the intersection of AI and IP. In the light of the challenges that AI posed to the patent system, the Delegation supported the discussion on AI and IP issues within the SCP, including the questions concerning AI inventorship.

#### Delegation of Venezuela (Bolivarian Republic of)

30. The Delegation of Venezuela (Bolivarian Republic of) summarized three situations relating to AI and the patent system: (i) AI-generated inventions as seen in the DABUS patent applications; (ii) AI as part of the subject matter of the patent applications; (iii) AI as a tool to assist patent offices in patent examination. Situation (iii) was considered particularly relevant for the IP offices of developing countries, as it would help to speed up the analysis of patent applications. Further, the Delegation gave an overview of the historic challenges of the patent system in relation to frontier technologies, such as the chemical inventions at the beginning of the 20<sup>th</sup> century and the development of genetic engineering starting in the 1960s. In light of those experiences, the Delegation expected that the challenges for the patent system related to AI would also be resolved. Therefore, the Delegation encouraged further discussions on AI and patents in the framework of the SCP.

#### Delegation of the United States of America

31. The Delegation of the United States of America aligned its statements with the statement made by the Delegation of Germany speaking on behalf of Group B, and supported the proposal of the Delegation of Switzerland.

#### Delegation of China

32. As to patentability of AI-related inventions, the Chinese Civil Code stipulated that the inventor needed to be a natural person and must substantially contribute to the creation of the invention. Therefore, machines were not eligible to be an inventor. In addition, in 2021, the China National Intellectual Property Administration (CNIPA) amended the Patent Examination Guidelines. As to eligible subject matter of AI related inventions and big data-related inventions, the Guidelines were formulated in more detail and provided concrete examples. In addition, the Guidelines clarified the criteria for a technical solution where patent applications contained algorithms.

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