AI GENERATED INNOVATIONS ARE PATENTABLE, IF SO, HOW CAN IT BE LICENSED?

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Annotation: *In this article, artificial intelligence technologies that collect large amounts of data, which are becoming an integral part of our lives, and perform large-scale operations through this information, as well as inventions created by artificial intelligence technologies, patentability of innovations, if the created invention is considered worthy of a patent, the issues of who should be recognized as the author and who should be the owner of the property rights derived from it have been thoroughly studied and the necessary recommendations have been given. In addition, the assessment of artificial intelligence as an object or subject was studied based on the legislation of Uzbekistan and the USA.*

Keywords: *artificial intelligence, the Fourth Industrial Revolution, AI Act, patents, inventions, natural person, jurisdictions, USA, nonobviousness, UKIPO, intellectual property, AI-generated inventions, Artificial super intelligence, compulsory license, Uzbekistan, Civil code.*

Artificial intelligence technologies are used by a large part of the world's population today, which means that it is in practice, but the relations that arise from the use of artificial intelligence are still open. Because most of the people who use these technologies do not know what artificial intelligence is. Moreover, there is still no legal document regulating the relationship arising from the use of artificial intelligence in any country of the world, countries are currently developing their strategies for the development of this field.

Currently, the production and use of artificial intelligence technologies is developing rapidly all over the world. Thanks to the use of these technologies, work in various fields is performed at low prices and in a highly efficient manner, leading to the achievement of the specified result in a short period of time. Even

in performing certain tasks in our daily life, the importance of artificial intelligence is increasing more and more.

According to the founder of the World Economic Forum, Klaus Schwab, artificial intelligence is the basis of the Fourth Industrial Revolution. Because in this period, various sectors of society are automated, work and services are performed with the help of intelligent machines, and as a result, it is possible to produce quality products, provide effective services to the population in a short time, improve the quality of education. Crime prevention is achieved through artificial intelligence technologies. The developed countries of the world have evaluated artificial intelligence as a driver of the country's development, and currently 34 countries, namely the USA, Russia, France, Germany, China, Japan, South Korea, Qatar, UAE, India, Singapore, etc., are developing their own artificial intelligence strategy.

The AI Act of March 13, 2024 on the Single European Union is a single act that is common to all EU countries. The AI Act is the world's first ever-comprehensive legal framework on artificial intelligence. By guaranteeing that AI systems uphold fundamental rights, safety, and ethical principles, as well as by addressing the risks associated with extremely potent and significant AI models, the new regulations hope to promote trustworthy AI in Europe and beyond.

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The development of artificial intelligence technologies and their penetration into the spheres of our society bring new opportunities and issues that require legal regulation. It should be noted that there is still no legal document regulating relations related to artificial intelligence in any country of the world. Because there is no clear answer to the question of what artificial intelligence is, artificial intelligence is a program that translates the words on our phone, a robot in human form, or intelligent equipment that determines the speed of cars and the approaching photo-radar ahead. In addition, it is estimated that in the near future, as a result of the automation of production and service industries through artificial

intelligence technologies, artificial intelligence will occupy a large number of jobs and cause an increase in the level of unemployment in society.

The creative aspects of artificial intelligence technologies are beginning to be noticed, that is, the issue of granting the status of intellectual property objects to the works and inventions created by artificial intelligence remains open. There are questions about whether music or books created by artificial intelligence are copyrighted, and inventions created by artificial intelligence technologies can be protected by patents.

An inventor must be a natural person and the original owner of the right in order for a patent to exist. It is possible for inventors to assign their rights to third parties automatically when their employees in the course of their work produce something. In actuality, artificial persons in the form of corporations own the majority of patents. Even in cases where businesses possess relevant intellectual property rights, the requirement that an inventor be a natural person guarantees the recognition of human creators.

In many jurisdictions, including the USA and Uzbekistan, there is no legislation that specifically addresses inventions generated by AI. Therefore, it's unclear who could own a patent for an AI-generated invention, whether such a patent could be granted, and what exactly qualifies as an inventor. It is obvious that the reason it was unable to register several AI-generated inventions for protection was that it was unable to locate a real person who met the requirements to be considered an inventor. Meanwhile, it's possible that patent offices have been awarding patents on AI-generated inventions for decades, but this is only because no one has revealed AI's role in the process.

In this case, I can give examples, which inventions created by artificial intelligence technologies are considered patentable.

The Creativity Machine paradigm (an at least one assembly of nodes and interconnects in a neural architecture that is subjected to various random or systematic disturbances in order to produce patterns that represent possible ideas and/or action plans. These concepts are then communicated to any kind of

algorithm that assesses) was the subject of Thaler's first patent. The second patent filed in his name was titled "Neural Network Based Prototyping System and Method". Thaler is listed as the patent's inventor, but he stated that a Creativity Machine generated the patent's invention. The Creativity Machine's Patent application was first filed on January 26, 1996, and granted on December 22, 1998. As one of Thaler's associates observes in response to the Creativity Machine's Patent, "Patent Number Two was invented by Patent Number One. Think about that. Patent Number Two was invented by Patent Number One!"[1]

In addition to the Creativity Machine's Patent, this AI Machine is credited with many other inventions, including the Oral-B Cross Action toothbrush's cross-bristle design, novel physical materials, and gadgets that search the Internet for messages from terrorists. The Creativity Machine's Patent is interesting because if Thaler's claims are accurate, then the Patent Office has already granted a patent for an invention created by nonhuman inventor. The Patent Office was also unaware that it did so. Thaler did not reveal the Creativity Machine's involvement at the time of filing, listing himself as the inventor on the patent on the advice of his attorneys.

Moreover, on January 25, 2005, the Patent Office granted a patent for a different AI-generated invention.[2] The "Invention Machine," a genetic programming-based artificial intelligence (AI) created by computer scientist and scratch-off lottery ticket creator John Koza, is credited with creating the invention. The AI "has even earned a U.S. patent for developing a system to make factories more efficient, one of the first intellectual property protections ever granted to a nonhuman designer," according to a 2006 Popular Science article about Koza and the Invention Machine. Without any help from humans and in just one pass, the Invention Machine produced the patent's content as well as an enhanced controller design. It accomplished this without having access to an expert knowledge

[1] Tina Hesman, *Stephen Thaler's Computer Creativity Machine Simulates the Human Brain,* St. Louis Post-Dispatch, Jan. 24, 2004, www.mindfully.org/Technology/2004/Creativity-Machine-Thaler24jan2004.htm
[2] Jonathon Keats, *John Koza Has Built an Invention Machine,* POPULAR SCI., Apr. 18,2006, https://popsci.com/scitech/article/2006-04/john-koza-has-built-invention-machine/.

database or knowledge of current controllers. To achieve the desired outcome, only basic component and specification information was needed. The Invention Machine then used this data to generate various outputs that were fitness-measured.

The AI's involvement in the Invention Machine patent was unknown to the patent office. Koza kept the Invention Machine's involvement a secret. Koza, like Stephen Thaler, has said that, even though the entire invention was created by a computer, his legal counsel at the time advised him and his team to consider themselves as inventors.

Patents grant the owner of the invention a temporary monopoly over their creation by prohibiting unauthorized use or duplication. Hence, the possibility of receiving a patent gives inventors even more financial incentive. AI technologies have no use for patents, but developers, owners and users of AI do. Patents on AI-generated inventions would increase the value of creative AI and encourage its advancement. On contrary, businesses would be discouraged from using AI to generate new intellectual property if patents were denied for inventions generated by AI, even in situations where AI would be more efficient than a human.

In 2019, the United Kingdom Intellectual Property Office (UKIPO) received an application for a patent for an invention created by artificial intelligence, and the author of the application is an artificial intelligence called "DABUS". Of course, this case could be a big step towards giving artificial intelligence authorship status, if approved. Before the Artificial Inventor Project`s announcing the filings, the United Kingdom Intellectual Property Office considered this invention worthy of a patent, but after the disclosure of the information, the application was rejected. Then UKIPO said that

“inventions created by AI machines are likely to become more prevalent in future and there is a legitimate question as to how or whether the patent system should handle such inventions. I have found that the present system does not cater for such inventions and it was never anticipated that it would, but times have changed and technology has moved on. It is right that this is debated more widely

and that any changes to the law be considered in the context of such a debate, and not shoehorned arbitrarily into existing legislation"[3].

In the patent acts of the USA and Uzbekistan, provisions provide at least a couple of challenges to AI's qualifying as an inventor. First, inventors must be "individuals" or "natural person" according to acts. But this language has been in place since time, Patent Acts in both countries were written, when legislators at the time were not thinking about AI-generated inventions. Second, patent law jurisprudence requires that inventions be the result of a "mental act", it's still unclear if an AI that generates patentable inventions on its own, without human intervention qualifies as an inventor in law.

The requirement of being a natural person precludes the patentability of any invention, even the most useful, unless it is kept secret that artificial intelligence is involved. But there are countries such as Monaco and Cyprus, which are members of the European Patent Office, where such a requirement is not mentioned in the patent laws. In this case, if the law does not directly state this requirement, can we grant a patent to an invention created by artificial intelligence?

Moreover, it should be noted that there is currently a state represented by Android with artificial intelligence, and a precedent has been created, as a result of which we can say that artificial intelligence has been given the legal status of a natural person. This country is Saudi Arabia, and the humanoid robot named Sofia was granted Saudi citizenship in 2017. According to the opinions of many experts, Saudi Arabia's granting of the status of a natural person to artificial intelligence is a hasty decision. It is considered unlikely that an object that does not have psycho-emotional characteristics characteristic of a person will be able to rationally use the legal status of an individual and expand his rights. At the same time, it is emphasized that mind and consciousness are not the same concepts. But do not the above requirements prevent Sofia from receiving the status of an inventor?

[3] (https://ipwatchdog.com/2020/01/07/epo-ukipo-refuse-ai-invented-patent-applications/id=117648/)

It's possible that requiring biological intelligence is a poor way to differentiate artificial intelligence from human inventors. Although there are currently no working biological computers, all the components needed have been made. A group of engineers from Stanford University produced a biological transistor in 2013. Several silicon transistors are used in mechanical computers to regulate the passage of electrons through a circuit to produce binary code. The Stanford group used enzymes to regulate the flow of RNA proteins along the DNA strand, producing a biological version with the same functionality. It is possible imagining a time when artificial intelligence may be wholly biological.

Current legal acts may refuse artificial intelligence the status of an inventor and the granting of a patent for an AI-generated invention, but as mentioned above, in the near future, artificial intelligence will reach a level that can meet the requirements of our laws, it may be a biological technology created by Stanford University scientists in 2013, or it may be a person like Sofia in 2017. Then in that situation, lawyers should not have difficulty in providing a legal solution to the participants of the relationship with using artificial intelligence. It is necessary to introduce and make changes in the laws related to artificial intelligence technologies in accordance with the requirements of the time.

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New, nonobvious, and useful inventions are eligible for patent protection. Obviousness is the main barrier to most patent applications among these three criteria. Patents should only be awarded for innovations that constitute a substantial advancement over currently available technology, not for incremental inventions. The reason for this is that patents restrict the use of patented technologies in research and development, which can limit competition and impede future innovation. If patents are justified at all, it's because their benefits are deemed to outweigh their drawbacks. As well as encouraging the commercialization of technology, information sharing, and the validation of

moral rights, patents serve as incentives for innovation. The primary test for differentiating between significant innovation and trivial advances is the nonobviousness requirement, though other patentability criteria also play a role in this regard. It is one thing, of course, to say that one wishes to preserve only significant scientific advancements, but it is quite another to devise a practical regulation that covers all fields of technology.

All inventions were made by humans until very recently. A research scientist or team of research scientists would be consulted by a company seeking to find a solution to an industrial problem. This is no longer the only option. We are seeing the shift from human to artificial intelligence inventors. This transition can be seen in the following five-phase framework, which breaks down the development of inventive AI into multiple phases for both the past and present.

Phase I came to an end in 1998, presumably, when the first patent for an invention made by an inventive AI was awarded. It was developed independently by a Creative Machine. It's not required to disclose AI involvement in patent applications, so it might never be able to pinpoint the exact date that the first patent for an AI-generated invention was granted.

Currently, in Phase II, humans and AI are competing and working together on creative projects. But since human researchers are the norm in all technological domains, they are the best example of the skilled person standard. In situations where inventive AI can solve a problem more effectively than human inventors, early adopters will be rewarded in this phase.

In the near future, Phase III will entail more human and AI collaboration as well as competition. Innovative AI will take on a standard role in specific sectors and for particular kinds of issues. Watson, for instance, now finds new drug targets and uses for old medications in the pharmaceutical sector.

According to experts, the arrival of artificial general intelligence (AGI) in 25 years will mark the beginning of Phase IV. AGI's role in this phase would be to carry out any intellectual work that a person could. In every field, artificial intelligence (AGI) will compete with human inventors, making it a natural

replacement for skilled workers. Human inventors might not be able to produce as many inventions as before.

The ability for AGI to reprogramme and enhance itself is perhaps most significant. Artificial super intelligence (AI) that would eventually outperform human intelligence in almost every field is predicted to arise from this "recursive self-improvement." When AGI achieves artificial superintelligence, Phase V will ultimately signify the end of obviousness. Furthermore, nearly anything can be invented or discovered by artificial superintelligence.

Instead of replacing skilled workers with inventive AI once the use of AI that automates research rather than enhances researchers becomes commonplace, the skilled person standard could include the information that "technologies used by active workers" include inventive AI. Rather than replacing the skilled worker with inventive AI, it would be less of a conceptual leap to characterize the skilled worker as an average worker using inventive AI. The outcome will be the same under either standard: the typical worker will be able to engage in creative work. However, it would be better if the creative AI took the place of the skilled worker, emphasizing that AI, not the human worker, is the one doing the creative work.

According to patent law, an inventive AI is one that satisfies conventional inventorship requirements and produces patentable output. Just as human inventors are not considered skilled individuals, inventive AI would not be the same as skilled AI under the current framework. The test might concentrate on an AI's creative ability. For instance, while it contributes to a great deal of creative work, Microsoft Excel is not innovative. It solves problems with known solutions in a predictable way by applying a body of known knowledge. Excel can't even function at the level of an average worker, even though it occasionally solves issues that a person could not readily solve without the aid of technology. Excel is not the equivalent of a skilled AI – it is an automation incapable of ordinary creativity.

In clinical settings, Watson might make a more accurate representation of a skilled worker. Watson is recommending a course of treatment after studying a

patient's genome. Based on previously published medical literature, Watson is able to identify known genetic mutations from a patient's genome and subsequently recommend known treatments. Because Watson is applying conventional wisdom to solve problems with known solutions, it is not innovating. Other Watson-related activities, however, could be creative. For example, you could provide it with unpublished clinical data on patent genetics and real drug responses, and then assign it the task of figuring out whether a medication works for a genetic mutation in a way that hasn't been identified yet.

Based on the above issues, we can give the following suggestions as a solution:

If artificial intelligence creates new inventions, the person using it can have the status of an inventor without having the ability to be an inventor. The result of the use of artificial intelligence shows that a real inventor and a non-inventor user become equal rights and equal abilities, and this situation creates an imbalance. For this reason, we would suggest that the legislators add a rule that provides for the use of artificial intelligence, which creates inventions, only for persons who have the ability to be inventors.

The importance of the uncertainty criterion over other criteria is that it is unknown to other inventors. Currently, technologies are developing very quickly, and artificial intelligence is expected to create a new generation of artificial intelligence technologies that work well and effectively, and can store more information in exchange for the information it receives. The creation of these technologies with artificial superintelligence, as we noted above, leads to limiting the criterion of uncertainty. Because after these technologies receive a very large amount of data,

- inventions that can be created by other inventors,

- the method and order of their creation will be known, and it may lead to the restriction of granting a patent, as well as to the ending of the activities of the patent granting organizations.

In addition, we have another issue that needs to be resolved - if artificial intelligence technologies cannot have the status of inventors in relation to the invention they created, if artificial intelligence is seen as a tool that helps to create a new invention. Who will be the right holder:

- the person who created the invention or the person who uses the invention?

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Various products such as paintings, inventions, scientific breakthroughs, novels, performances, and software share a common characteristic. These creations are the result of a maker's time, thought, and creative energy; these are referred to as intellectual property (IP). They truly are the property of the individual or business that made them. They are property, just like a watch or automobile, but ownership cannot be controlled by the law in the same manner that it does with tangible property.

Consider intellectual property to be mental creations. The law has created numerous strategies to safeguard intellectual property ownership rights. It also offers a licensing procedure for intellectual property that allows the right to use IP to be transferred.

Intellectual property owners can control who can use and how their creations are used by granting licenses, which enables them to make money from their creations. Ownership rights belong to the creator both during and after the license period.

Intellectual property owners can sell an entrepreneur-licensee the right to use their creations by licensing them. The owner grants the licensees permission to use the property for any purpose they see fit by extending the license. For that purpose, an IP licensing agreement is useful as long as both sides have the necessary knowledge to specify the proper permissions. Parties that lack knowledge may find themselves in dangerous situations because they are unable to negotiate for a favorable price if they do not know what they need or want.

Each party should sign a written copy of the license agreement. The licensor and licensee typically negotiate the terms of the agreement, though occasionally one party does.

To help draft an agreement that reflects their understanding and contains appropriate permissions in terms of duration, terms of use, and similar structures, many turn to licensing agents or IP attorneys. These experts can also assess whether a draft agreement drafted by the parties adequately safeguards the interests of each party. While drafting the agreement, licensors should take certain things into account, like these main points that will be negotiated between the parties.

- **The rights** being transferred to the licensee must be specified in each license agreement; these rights will vary per contract based on the licensee's desires. A product created by the licensor may be reproduced, distributed, or modified for a different purpose by different licensees. When drafting a license agreement, the parties want to avoid getting swept up in legal disputes and instead want to succeed in their business endeavors. Everyone will be happier if the parties can clearly define the rights they are giving up. A comprehensive explanation of the license's rights is necessary.

- Anything pertaining to finances and money belongs in the **consideration section**. Depending on the agreed upon consideration, this section may be fairly straightforward or quite complicated. The language can be standard and include the royalty percentage, milestone payments, the type of currency to be paid in, and the procedure for figuring out the exchange rate between currencies if the deal is a straight monetary exchange (single sum) or involves royalties. Equity-ownership concerns should also be covered in this section if equity is not a factor in the license purchase. In any case, any minimum yearly payments should be specified in this section.

- **Territory** has the exact meaning that it suggests. It specifies the uses for which the licensee may put it to use. The territory—whether it be a single nation or all nations—granted to the licensee under the license must be specified

in the contract. The countries or regions of a country that are exempt from the license may be mentioned in the description of territory.

- When attorneys or license agents discuss **exclusivity**, they are referring to the individuals or organizations that are authorized to use the license. Rights may be fully exclusive, allowing only the licensee to carry out the tasks specified in the license. They may also be co-exclusive with the licensor, which means that the only other party having the same rights is the one awarding the license. Lastly, the rights may be nonexclusive, which allows the licensor to sell comparable rights to third parties. Any conditions pertaining to exclusivity and/or non-exclusivity are detailed in this section, along with the revocability or irrevocability of the rights granted. It might also specify whether the licensee is allowed to grant other people sublicenses.

- The duration of the licensing agreement is stated in this clause. The licensing agreement's expiration date and its effective date should be included. The **term** may be stated in the contract in terms of years, months, or days. A precise end date or event that will bring the agreement to an end can be specified in the contract. The term might be for the duration of a particular patent, for instance.

- When a party violates the terms of the license, they are infringing on the rights of another. A license agreement can specify how to handle future **infringement** and can also pardon previous violations by the licensee. The parties' rights may also be violated by a third party. This part specifies who will file the lawsuit and how the licensee and licensor will split any winnings. If a third party is harmed, one party may consent to indemnify the other, making them whole. The conditions of **indemnity** in this section should be spelled out in the contract.

- **The laws governing** the interpretation of the contract will differ if the licensee conducts business in Uzbekistan and the IP owner resides in the United States. In the event of a disagreement, the parties should settle on the applicable law during the license negotiation process.

- The parties might need to **take the dispute** to a different forum if there is a significant difference of opinion regarding how to interpret the terms of the agreement. They can settle on that forum in advance, saving themselves arguments during the conflict. Arbitration or legal action in court is up to the parties. The parties can specify the specifics in this clause, and arbitration is frequently less expensive than going to court.
- Parties may, and occasionally should, include many more clauses in an IP licensing agreement; this list is not exhaustive. For instance, in certain situations, a business might want to incorporate a non-disclosure clause to safeguard important and private data. Since IP licensors are in charge of upholding their own license agreements, it makes sense to collaborate with a qualified expert when creating one.

Intellectual property licensing is a form of contracting. Care, attention to detail, and experience are needed when preparing intellectual property documents in order to foster a productive, long-lasting business partnership.

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Authors (owners) of the results of intellectual activity have commercial and personal non-commercial rights to these results. In turn, other persons are allowed to use intellectual property objects belonging to the author (right holder) on the basis of exclusive right only with his permission. Accordingly, the owner of the exclusive right to the object of intellectual property has the right to fully or partially transfer this right to another person, to allow another person to use the object of intellectual property. The complete transfer of the right to intellectual property to a third party means that the owner refuses to use the intellectual property in his business. That is, in the transfer of intellectual property rights, the assignee buys the intellectual property rights belonging to the transferor (assignor), in which case the transferor can also take back the license from the person who bought the rights (intellectual with the exception of partial transfer of rights to property).

The transfer of intellectual property rights can be made through the sale of such rights or in the form of a transfer (with or without direct financial compensation). Patent legislation requires that such transfer be formalized in writing in order to properly and effectively establish the relationship of transfer of rights to intellectual property. Accordingly, the transfer of intellectual property rights is usually formalized in the form of a contract. The reason for this can be seen in the following wishes of the transfer parties:

- when transferring the right to intellectual property, in addition to the transfer, to return the license to the recipient, to include a condition on intellectual property guarantees, restriction of trade, and other similar conditions;

- express the desire to fully transfer intellectual property rights in a clear document.

There is a difference between the results of an absolute license of intellectual property and the transfer of intellectual property rights, and such a difference is determined based on the content of the document defining the conditions of transfer. In determining the content and conditions of the contract, the right to file a claim against the infringers may be affected, as well as the right to use the benefits of intellectual property under certain conditions or in the latest terms.

According to the legislation of the Republic of Uzbekistan, license agreements on the transfer of rights to intellectual property objects and their use must be officially registered with the competent authority - the Ministry of Justice of the Republic of Uzbekistan[4]. This provision is also reflected in the laws of our country on the field of intellectual property and the Rules approved by the order of the Minister of Justice of the Republic of Uzbekistan No. 8, approved on March 31, 2022.

[4] Law of the Republic of Uzbekistan ORQ-701 No. 14.07.2021.
"Law of the Republic of Uzbekistan on Licensing, Permitting and Notification Procedures"

Licensing of intellectual property objects in the Republic of Uzbekistan is carried out on the basis of its regulatory documents in the following order:

- According to Article 11 of the Law of the Republic of Uzbekistan "On Inventions, Utility Models and Industrial Designs", the procedure for transferring the rights to inventions, industrial models and utility models created by scientists to other persons is determined.

If there are more than one patent owner, the relations regarding the use of the object of industrial property are determined according to the agreement between them. If there is no such agreement between them, each patent owner can use the object of protected industrial property as he wishes, but he has no right to grant an exclusive license to the object or transfer the patent to another person without the consent of the other patent owners.

The patent owner can transfer the right to the object of industrial property confirmed by the patent to any legal entity or individual(s) under the agreement on relinquishment of the patent in favor of another or the right to use the object of industrial property under the license agreement. The agreement on relinquishment of the patent in favor of another and the license agreement must be registered in the Ministry.

At the same time, there is also a type of compulsory license for industrial property objects, if the patent owner has three years from the date of registration of the patent for the invention or four years from the date of filing the application for obtaining a patent from the object of industrial property. does not use it or does not use it enough, and this non-use leads to insufficient supply of relevant goods, works and services in the market, any person who wants to use the object of industrial property, in case the patent owner refuses to conclude a license agreement based on acceptable commercial terms, a mandatory simple (non-exclusive) license may apply to the court for issuing. Such appeal shall be submitted to the patent owner two months after the date of sending the offer to conclude the license agreement. In this case, if the patent owner does not prove

that the non-use of the patent is due to valid reasons, the court will make a decision to issue a compulsory license.

The right to use an object of industrial property obtained on the basis of a compulsory license can be given to another person only together with the enterprise using this object or its relevant part.

Compulsory license should be issued, first of all, to meet the needs of the domestic market of the Republic of Uzbekistan. When issuing a compulsory license, the court must determine the scope and duration of the use of the object of industrial property, the amount of payment to be paid to the patent owner, its term and its procedure. The amount of payment for a compulsory license should not be less than the market price of the license determined in accordance with practice. A compulsory license shall be canceled by the court if the circumstances that served as the basis for its issuance are terminated. Based on the decision of the court, the Ministry carries out the state registration of the granting and cancellation of the right to use the objects of industrial property based on the conditions of the compulsory license.

- According to Article 38 of the Law of the Republic of Uzbekistan "**On Plant Varieties and Animal Breeds"**, a patented variety and breed can be the object of a license agreement. Also, any legal entity or individual who is not the owner of the patent has the right to use this selection achievement by signing a license agreement with the permission of the patent owner. Licensing contracts are concluded in an open and mandatory manner in relation to the selection achievement. An open license should be understood as being granted by the patent holder to any person for use. According to the open license agreement, the patent owner can transfer the right to use the selection achievement to another person by granting an absolute license or an indirect (ordinary) license.

When an absolute license is granted, the licensee receives the exclusive right to use the selection achievement within the scope specified in the license agreement, the part of the right to use the selection achievement that is not given to the licensee remains with the licensor.

When an absolute (ordinary) license is granted, the licensor grants the licensee the right to use the selection achievement and reserves all rights arising from the patent, including the right to grant licenses to other persons.

If the patent owner does not use the selection achievement in the Republic of Uzbekistan within three years from the date of patent issuance and refuses to conclude a license agreement, and if the non-use of this selection achievement affects the interests of society, the use of this selection achievement a person who wishes can apply to the court with a request to issue a compulsory license.

A compulsory license is issued in the form of an absolute (simple) license and gives its owner the right to obtain initial seeds, seedlings or reproductive material from the patent owner.

A compulsory license is issued only to a person who can ensure that the selection achievement is used in a permitted manner and in accordance with the license.

Compulsory license does not prevent the owner of the patent from using the protected breeding achievement or granting a license to another person to use the breeding achievement.

- Article 30 of the Law "On Trademarks, Service Marks and Names of Places of Origin" contains a separate article on the transfer of the exclusive right to a trademark to another person. Features:

- the transfer of the right to use trademarks to other persons is carried out by drawing up a license agreement;

- in addition, the licensee may not mislead the consumer about the product or its manufacturer when using the right;

- the license agreement must state that the quality of the licensee's goods will not be lower than the quality of the licensor's goods, and that the licensor will monitor the fulfillment of this condition;

- A contract or a license contract on the transfer of trademark rights to another person must be registered with the Ministry.

According to Article 1034 of the Civil Code of the Republic of Uzbekistan, the owner of property rights in relation to the result of intellectual activity or a means of reflecting private signs has the right to use this object of intellectual property in any form and in any way according to his will. The use of intellectual property objects belonging to the right holder on the basis of absolute right by other persons is allowed only with the permission of the right holder.

Based on the above, the concept of absolute right to intellectual property includes the following actions:

- possibility to prepare, sell, use and distribute any product created as a result of intellectual activity (invention, utility model, industrial model) and distribute it through the state territory;

- the possibility of producing products using the patented technology, methodology, method;

- the possibility of using patent-protected technology.

The results of intellectual activity are transferred to third parties through various methods, and this transfer is divided into commercial and non-commercial types. These methods have their own special features. Usually, it can be a non-commercial way of mutual exchange or giving of scientific and technical information or other level of cooperation.

Statistics of the registration of agreements on the full or partial transfer of rights to intellectual property objects in the Republic of Uzbekistan in the last years

(in the section of intellectual property objects)

IP objects name	2020	2021	2022	overall
Licenses of intellectual property rights				
Invention	4	8	4	16
Utility model	1	2	-	3
Trademarks	102	164	139	404
Electron Database	7	4	3	15
Overall	114	178	146	438

The following documents are submitted to the authorized body (Ministry of Justice of the Republic of Uzbekistan) for the registration of contracts:

a) application for contract registration.

The application is submitted in one copy in the Uzbek or Russian language in the form specified in the Rules. Foreign names and names of enterprises are given in Uzbek or Russian transliteration. The application must be for one contract.

If the agreement of the patent owners (right holders) to grant a license to another person or to transfer the right is not recorded in any other submitted document, the application is signed by all of them.

The application by a legal entity is signed by the head of the enterprise, organization or by a person authorized to do so, indicating his position. The signature is confirmed with a seal. Signatures are opened with the first and last names of the signers and the initials of their patronymics.

b) a contract or an extract from a contract approved in the prescribed manner in triplicate.

The contract sheets must be sewn, numbered, and must not contain corrections, additional entries, deleted words, or other non-agreed corrections. The contract should contain the following information:

- clearly indicated parties to the contract;

- subject of the contract (protection document number, trademark international registration number);

- type of transfer of rights;

- the volume of rights transferred under the license agreement;

- the area of validity of the contract;

- the validity period of the contract;

- the amount of the award (or a rule confirming the existence of an agreement in this regard).

c) a document confirming the right to inherit;

d) power of attorney confirming the authority of the representative;

e) a document confirming the payment of the specified amount of patent duty or fee for the registration of the contract, or a document confirming the grounds for exemption from patent duty or fee payment.

State scientific research centers or small and medium-sized business entities may not be able to directly use intellectual property rights. If such entities are considered the owners of intellectual property, they will consider the issue of finding a suitable licensee for the intellectual property in order to fully exploit the financial aspects of the invention. Licenses allow patent owners to provide inventions or other intellectual property while retaining control, while receiving income (royalties) or other benefits (for example, free access to the knowledge and experience of other firms).

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Because AI-generated inventions are so unique, licensing them can be a challenging problem. Finding the owner of the AI-generated invention's intellectual property rights is an important factor to take into account. The person who created the AI might be regarded as the inventor in some legal systems, but the owner or user might be in others. License agreements can be created to allow third parties to use the AI-generated invention in exchange for specific conditions, like royalties or licensing fees, once ownership rights have been established. These contracts usually specify the obligations and rights of the licensee (the entity that obtains the license) and the licensor (the owner of the AI-generated invention). When creating a licensing agreement for an AI-generated invention, it's critical to take into account elements like the license's scope, any use restrictions, exclusivity, territory, duration, and payment terms. Furthermore, because AI technology is developing quickly, it is a good idea to get legal counsel to make sure the licensing agreement takes into account any particular issues that AI-generated inventions may present.

As AI technologies are used as a tool for creating inventions under current law system, we use the usual licensing method for licensing AI-generated inventions until artificial superintelligence is created.

There are some similarities and differences to take into account regarding the licensing of inventions in the USA and Uzbekistan:

Similarities:

- Intellectual Property Laws: Inventors are protected by intellectual property laws in both the United States and Uzbekistan. Both countries have legal frameworks that govern licensing agreements.

- Patent Protection: Inventors may apply for patent protection for their creations in both nations. In most licensing agreements, the patented inventions' usage rights are granted in return for financial compensation, such as royalties or fees.

The licensing agreements in Uzbekistan and the USA necessitate legal documentation that delineates the license's terms and conditions, encompassing its extent, duration, royalties, and other pertinent details.

- Legal Systems: The common law legal system in the United States may differ slightly from the civil law system in Uzbekistan. This may have an impact on how licensing agreements are interpreted and implemented.

- Regulatory Environment: When it comes to licensing agreements, the regulatory environments in the USA and Uzbekistan may differ. These differences may include restrictions on certain types of inventions, tax implications, and registration requirements.

- Enforcement: The enforcement of intellectual property rights and licensing agreements may differ between the two countries due to variations in legal procedures, court systems, and the effectiveness of intellectual property protection mechanisms.

- Cultural and Business Practices: Relationships and license negotiations between parties in the USA and Uzbekistan may be impacted by cultural and business practices. Successful licensing agreements depend on both parties being aware of and able to negotiate these differences.

- Economic Factors: The terms and value of patent licensing agreements can be influenced by a number of factors, including market dynamics, the degree of technological advancement in each nation, and economic considerations.

Generally, when entering into licensing agreements, it is important to take into account the unique legal, regulatory, and business environment of each country, even though there are general principles that apply to licensing inventions in both the USA and Uzbekistan. Navigating these differences and ensuring a successful licensing arrangement can be facilitated by getting expert legal advice and performing due diligence.

A number of difficulties may arise when licensing inventions, some of which are as follows:

- Complexity of Technology: Sometimes inventions involve cutting-edge or complex technologies that are difficult to license without a thorough understanding. Potential licensees may find it difficult to understand the invention's potential uses and value due to its complexity.
- Intellectual Property Rights: It can be difficult to decide who owns the invention's intellectual property rights, particularly in situations where AI is involved or when the invention was developed collaboratively. It is essential to settle these ownership disputes before signing any licensing contracts.
- Terms Negotiation: Since both parties may have different priorities, expectations, and valuations of the invention, negotiating the terms of a licensing agreement can be difficult. It can take some time to come to a consensus on matters like duration, territory, exclusivity, and royalties.
- Compliance and Enforcement: It can be difficult to enforce intellectual property laws and keep an eye on how the licensed invention is being used to avoid infringement. There may be difficulties in enforcing the licensing agreement's terms, particularly when doing so across jurisdictions.
- Technological Changes: Innovations may become antiquated or eclipsed by more recent technologies in quickly developing fields like artificial

intelligence (AI) or biotechnology. In terms of the license's long-term viability and value, this puts licensees and licensors at risk.

- International Considerations: Because different countries have different legal frameworks, regulations, and cultural norms, licensing inventions internationally can present extra challenges. It is crucial to comprehend and handle these global considerations.

It is frequently necessary to address these issues with careful planning, effective communication, and expert legal advice. To reduce potential problems in the licensing of inventions, it is crucial for both licensors and licensees to perform due diligence, carefully consider terms, and thoroughly document the agreement.

While the principles governing invention licensing in the USA and Uzbekistan may be similar, there may be differences in the legal systems and procedures. When evaluating invention licenses in various nations, keep the following general points in mind:

Uzbekistan:

- Intellectual Property Laws: The rights to inventions, trademarks, and copyrights are governed by Uzbekistan's unique set of intellectual property laws. Comprehending these regulations is crucial when obtaining an invention license in Uzbekistan.

- Patent Protection: In order for an invention to be legally protected in Uzbekistan, it must first be patented. In Uzbekistan, a typical licensing agreement entails granting the right to use the patented invention in return for fees or royalties.

- Licensing Regulations: Uzbekistan may have specific regulations or requirements for licensing agreements, so it's important to ensure compliance with these regulations when licensing inventions.

- Intellectual Property Laws: Patents, trademarks, and copyrights are all protected under the well-established intellectual property laws of the USA. These laws apply to invention licensing agreements in the United States.

- Patent Protection: The United States Patent and Trademark Office (USPTO) issues patents to inventors in the USA, allowing them to legally guard their creations. Typically, licensing agreements involve paying a fee in exchange for the right to use the patented invention.

- Licensing Practices: In the United States, license agreements frequently contain clauses defining the terms of the license, such as those pertaining to royalties, exclusivity, territory, duration, and sublicensing rights.

It is advisable to work with legal counsel who is knowledgeable about the intellectual property laws and regulations of both Uzbekistan and the USA when licensing inventions. They can guarantee that the rights of the licensee and inventor are upheld and assist in navigating the difficulties of licensing agreements.

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In conclusion, artificial intelligence technologies will continue to evolve, and this in itself will lead to the emergence of a new generation of artificial intelligence. These new artificial superintelligence generated inventions meet requirements that cannot be rejected by current legal norms when examined in all respects. That is, as stated by the European Union, if it gradually acquires the status of an electronic person, as well as biologically, if it is developed on the basis of the technologies created by Stanford University scientists, the technologies created by Artificial Intelligence will be considered worthy of a patent.

However, even if the electronic person includes non-property rights, the use of property rights should belong to third parties. In this situation, the user will be the direct owner of property rights. If this artificial intelligence is involved in the production of certain goods or in the provision of services, but this artificial intelligence technology produces patentable inventions, to clarify the user and its

owner, about the invention being created it is necessary to make changes to the norms on transfer to a person with certain knowledge and experience. Because if these norms are not introduced, any person may be registered as an inventor, and it may create an imbalance between inventors.

In addition, the uncertainty criterion may disappear in the near future, with the introduction of super artificial intelligence into our society, and the end of patenting offices. Because the technologies of super artificial intelligence retain a large amount of information, the inventions made by scientists remain clear and known. Therefore, special criteria should be created for artificial intelligence.

Transferring inventions created by artificial intelligence to another person for use increases the attractiveness of the contract, because when concluding such contracts, it is important to determine the owner of the invention, and if the owner is an electronic person, the owner of its property rights. Licensing plays a vital role in the responsible and effective commercialization of AI-generated inventions, balancing the interests of inventors, developers, companies, and society as a whole.

Until a new type of artificial intelligence is created and legal norms are changed, using the usual process of licensing inventions is currently the best way to license inventions created by artificial intelligence.

REFERENCES

1. Tina Hesman, *Stephen Thaler's Computer Creativity Machine Simulates the Human Brain,* St. Louis Post-Dispatch, Jan. 24, 2004, www.mindfully.org/Technology/2004/Creativity-Machine-Thaler24jan2004.htm;

2. Jonathon Keats, *John Koza Has Built an Invention Machine,* POPULAR SCI., Apr. 18,2006, https://popsci.com/scitech/article/2006-04/john-koza-has-built-invention-machine/.;

3. "Law of the Republic of Uzbekistan on Licensing, Permitting and Notification Procedures" ORQ-701 No. 14.07.2021.;

4. “Law of the Republic of Uzbekistan On Inventions, Utility Models and Industrial Designs” ORQ-397-II 29.08.2002.;

5. “Law of the Republic of Uzbekistan **On Plant Varieties and Animal Breeds” ORQ-395-II 29.08.2002;**

6. “Law of the Republic of Uzbekistan On Trademarks, Service Marks and Names of Places of Origin” ORQ-267-II 30.08.2001;

7. (https://ipwatchdog.com/2020/01/07/epo-ukipo-refuse-ai-invented-patent-applications/id=117648/).