Creations of artificial intelligence

In search of the legal protection regime

by **Anna Shtefan***

Abstract: Pictures, texts, music, sound recordings autonomously generated by artificial intelligence systems have already become part of the global market for goods and services. Unlike works and objects of related rights, AI-generated objects fall into the public domain from the moment of their appearance because there is no legal regime for their protection. Whether this status should be maintained in the future is one of the most difficult questions. In 2020, the European Parliament concluded that it is necessary to introduce legal protection for such objects but it has not yet been determined how this should be done. There are various scientific arguments in favour of such protection, which, however, raise reasonable doubts due to the fact that they are not confirmed by practice. Many proposals have been made regarding the legal regime for the protection of objects generated by AI without human participation, which are also quite controversial. This article examines the rationale for the legal protection of autonomous computer creations and possible concepts of their legal protection. Objecting to the protection of computer creations by copyright and related rights, this article justifies that, if the need for their legal protection is proven, it requires the development of a special legal regime.

Keywords: artificial intelligent; creativity; originality; copyright; intellectual property; legal protection; sui generis

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A. Introduction

1 In the studies of intellectual property law in recent years, it is difficult to find a more debated issue than the legal protection of images, texts, music, sound recordings, and other similar objects created by artificial intelligence (AI) systems without direct human involvement. Although there are many initiatives to seek an appropriate legal regime, the legal systems of the world do not yet have an answer to the question of how to protect computer creations.

2 The European Parliament in the resolution on intellectual property rights for the development of artificial intelligence technologies of 20 October 2020 (EU Resolution) concluded that "technical creations generated by AI technology must be protected under the intellectual property rights legal framework", however, "works autonomously produced by artificial agents and robots might not be eligible for copyright protection, in order to observe the principle of originality, which is linked to a natural person, and since the concept of 'intellectual creation' addresses the author's personality" (para 15).[1] On April 21, 2021, the European Commission presented the Proposal for a Regulation laying down harmonised rules on artificial intelligence (EU Proposal for AI

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1 European Parliament resolution of 20 October 2020 on intellectual property rights for the development of artificial intelligence technologies (2020/2015(INI)) <https://www.europarl.europa.eu/doceo/document/TA-9-2020-0277_EN.pdf> accessed 15 November 2022.

Regulation).[2] This document covers a wide range of issues related to the introduction and use of AI systems, but it lacks provisions for the protection of objects generated by AI. Therefore, the declared intention regarding their potential protection at the EU level has not yet been determined. Other jurisdictions also do not yet have a solution to this issue. Currently, at the global level, the results of the autonomous operation of a computer program are not protected, and in addition, some countries expressly prohibit the registration of copyrights on such objects.[3]

3 In studies of this issue, conclusions have been repeatedly made about the need for legal protection of objects generated by AI without human intervention, but today there is no convincing evidence that this is really necessary. Although scholars from different parts of the world have proposed a number of arguments in favour of the introduction of such protection, each of them raises reasonable doubts presented in this study. This article also briefly describes the essence of autonomous computer creations and considers possible regimes of their potential legal protection. As a result of the study, it is argued that if objects generated by AI without human intervention deserve legal protection, this requires the development of a special regime. However, the existing concepts of this special regime are still debatable and cannot yet serve as a basis for the adoption of legislation in this area.

B. Autonomous computer creation as a potential object of legal protection

4 For many years, software has served as a tool for creating works by analogy with other means, such as paints and brushes for drawing, pen and paper for writing. When computer technology is only a device for the implementation of creative ideas, there is no doubt that the result is a product of human activity. When a work is created with the help of AI, the possibility of human authorship depends on how much a person contributed to the creation of the work. If AI analysed certain data, and a person wrote an article based on it, or AI generated a series of colours, and a person drew a picture with these colours, that is, "AI was only employed as a tool for implementing human decisions",[4] it seems obvious that such a work was created by a person. When a person modifies or reworks an AI-generated object and makes certain creative choices, the end result may be considered a work created by that person; at the same time, the modification may have a purely technical nature, so each such case should be considered individually.[5] Along with this, there are many examples when an object is generated by a computer, and no person has had a direct creative influence on this object. Such objects are considered the results of the autonomous functioning of AI.

5 There are many definitions of AI that explain its nature and features. The most important aspect in understanding AI is that the term "intelligence" in this case means the ability of a computer to perform certain operations inherent in the human brain while AI as such is not a brain. It is a software that can, for a given set of human-defined objectives, generate outputs such as content, predictions, recommendations, or decisions influencing the environments they interact with (Art. 3(1) of the

2 Proposal for a Regulation of the European Parliament and the Council laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain Union legislative acts <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021PC0206> accessed 15 November 2022.

3 In particular, according to the requirements of the U.S. Copyright Office, the registration is only possible for "an original work of authorship, provided that the work was created by a human being. The copyright law only protects 'the fruits of intellectual labor' that 'are founded in the creative powers of the mind'. Because copyright law is limited to 'original intellectual conceptions of the author', the Office will refuse to register a claim if it determines that a human being did not create the work". See: Compendium of U.S. Copyright Office Practices § 101 (3d ed. 2021), para 306.

4 Patrick Zurth, 'Artificial Creativity? A Case Against Copyright Protection for AI-Generated Works' (2021) 25(2) UCLA Journal of Law & Technology <https://uclajolt.com/wp-content/uploads/2021/12/Zurth_Artificial-Creativity.pdf> accessed 15 November 2022.

5 As the experts of the Max Planck Institute for Innovation and Competition concluded, "it is highly case-dependent whether 'works' generated with the help of AI tools can meet the protection threshold in view of the human creativity involved". See: Josef Drexl et al., 'Artificial Intelligence and Intellectual Property Law Position Statement of the Max Planck Institute for Innovation and Competition of 9 April 2021 on the Current Debate' (2021) <https://www.ip.mpg.de/fileadmin/ipmpg/content/stellungnahmen/MPI_PositionPaper__SSRN_21-10.pdf > accessed 15 November 2022.

EU Proposal for AI Regulation).[6] It is a computer programme capable of performing specific tasks according to a built-in algorithm by processing information, analysing it, and giving definite results.[7] AI works with a huge amount of data that the human brain is not able to keep in memory, performs operations with this data that are inaccessible to humans without the use of technical means,[8] and in general, can process and structure information much better than one person or team do.

6 However, AI cannot think and generate new ideas. It is completely dependent on the functions programmed into it; it cannot go beyond its built-in algorithm and perform tasks not provided for in its codes. Moreover, AI "does not have the freedom to decide about its tasks and utilization by humans; it cannot define its own norms and goals."[9] Therefore, when we say that AI is able to autonomously generate certain objects, it is not an absolute concept but rather a relative category.

7 The main characteristics of autonomy can be considered "the ability to make independent decisions or draw conclusions"[10] while AI is able to make only those decisions that are provided by its codes. If AI is designed to write texts, it cannot decide to write music because its algorithm is not meant for this. It has only a certain technical autonomy, which means its ability to execute programmed commands without the need for constant human guidance and control, the ability "of producing outputs with minimal user input."[11] A person configures the AI, loads certain data into it, and gives a command to start the process of data analysis or synthesis of information based on the analysis, but a person does not control every step that the computer needs to take in the process of analysis or synthesis. AI performs this activity independently and this is where its autonomy is displayed.

8 The specificity of the functioning of many AIs is that no one knows and cannot predict what the specific content or the look of the object generated by AI will be. This phenomenon, the so-called "black box", is caused by the ability of AI to learn, create internal structures with data, and make choices among these data. No one can explain why AI made one or another choice, and "even the programmers cannot tell you why a specific output was generated."[12] Developers, end-users and other specialists who operate with AI know in advance the type of object that the algorithm is supposed to create (text, images, music, etc.), and may know the kind of this object. For example, The Next Rembrandt was designed to create a new portrait that imitates the style of Dutch artist Rembrandt Harmenszoon van Rijn.[13] It is quite clear that The Next Rembrandt will not paint a landscape or still life because its program codes are focused only on the image of a person. Nevertheless, no one knew what facial features and hairstyle the person in the portrait would have; all these elements are the result of a series of choices made by the computer based on preliminary calculations. Therefore, it is quite true to say that AI is "creating unpredictable works"[14] as the specific content of the generated object is not determined by a person, it is done by a computer.

9 Thus, an autonomous computer creation is the result of the functioning of AI with so little human intervention that the content of the generated object depends only on the choice of the computer and cannot be expected or predicted by humans. The special nature of these objects raised the question of whether they can receive legal protection and whether they should be protected at all.

6 Proposal for a Regulation (Artificial Intelligence Act), (n 2).

7 Anna Shtefan, 'Creativity and artificial intelligence: a view from the perspective of copyright' (2021) 16(7) *Journal of Intellectual Property Law & Practice* 720, 727.

8 According to Shlomit Yanisky Ravid, AI "breaks the data down into 'tiny' electronic signals, undetectable by humans, and tries to identify hidden insights, similarities, patterns, and connections." See: Shlomit Yanisky Ravid, 'Generating Rembrandt: Artificial Intelligence, Copyright, and Accountability in the 3A Era – The Human-like Authors are Already Here – A New Model' (2017) Michigan State Law Review 659, 676.

9 Tim W. Dornis, 'Of 'Authorless Works' and 'Inventions without Inventor' – The Muddy Waters of 'AI Autonomy' in Intellectual Property Doctrine' (2021) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3776236> accessed 15 November 2022.

10 Daniel J. Gervais, 'The Machine as Author' (2020) 105 Iowa Law Review 2053, 2098.

11 Jane C. Ginsburg and Luke Ali Budiardjo, 'Authors and Machines' (2019) 34 Berkeley Technology Law Journal 343, 433.

12 Aleksandre Asatiani et al., 'Challenges of Explaining the Behavior of Black-Box AI Systems' (2020) 19(4) MIS Quarterly Executive 259, 259-260.

13 Next Rembrandt <https://www.nextrembrandt.com/> accessed 15 November 2022.

14 Shlomit Yanisky Ravid, (n 8) 679.

C. Issues of justification for the protection of AI-generated objects

10 AI-generated objects are already part of the world market.[15] They are sold in the same way as copyrighted works but unlike works, the use of which can be authorised or prohibited by the author or another right holder, there is no such authority for objects created by AI. Currently, everyone can use these objects as they wish and benefit commercially, and AI investors have no control over this because computer-generated works belong to the public domain. The question, however, is whether this status should be maintained in the future.

11 There are various arguments against the introduction of the legal protection for the results of autonomous functioning of a computer. In particular, people should be able to freely use machine results in their own creativity or other activities that will benefit society; that is, objects generated by AI should serve the benefit of humanity, and access to them should not be restricted by establishing a regime of their legal protection.[16] Also, there is potential for negative impact of these objects on the market of human works, as these objects "may create value in some areas, but it will pose risks in others, not the least of which is to the future of human creativity".[17] Considering that AI can produce many conventionally new results per day, it is possible that these objects will supplant the results of human creativity since humans are unable to compete with computers in the frequency and number of new proposals. As a result, it will at least reduce the income of authors, and in some sectors, it can significantly devalue human creativity. However, if computer creatures stay in the public domain, this "would ensure that humans remain an integral part of the creative fields".[18] It is widely believed that legal protection of the results of the autonomous functioning of a computer will lead to excessive rewards for AI developers and other persons who provide the functioning of AI. Since these persons receive remuneration for their work as employees of the company or independent specialists engaged on the basis of contracts, as well as receive a copyright or patent for AI as software and hardware, additional protection of their interests is considered unreasonable.[19] In addition, Zurth states that the legal protection of the computer creatures may give rise to a large number of monopolies which in general will have a negative effect on innovation since "the access to that technology is limited to relatively few actors; the monopolies to be concentrated among those who are already powerful".[20]

12 These opinions are quite interesting for analysis and discussion since there is no data to confirm that the refusal to grant legal protection to AI-generated objects will have a significant public benefit or prevent a threat to the interests of authors or society. However, these arguments deny the possibility of legal protection of autonomous computer creations while the purpose of this article is to find evidence in favour of granting such protection.

13 The legal protection of intellectual property can be justified by the purpose of ensuring the interests of the creator or the purpose of protecting investments. In the first case, it concerns the establishment of legal means that will be able to reward the creative efforts of persons and provide them with economic incentives for creativity. The second case may be related to the support of financial, organizational, and other non-creative efforts made in the creation of certain objects and ensuring the normal functioning of the market; "relying on remedying a market failure in public goods markets."[21] There is no doubt that AI as such does not need moral and economic incentives to function and generate certain objects. Therefore, the main argument for the introduction of the legal protection of autonomous computer creations is to support innovators in the AI industry, to encourage and protect investments made in the creation and operation of AI.

14 This position states that in the absence of legal protection "innovators may eventually shy away from investing their time and effort in this field",[22]

15 For example, the site https://booksby.ai/ sells science fiction novels generated by AI.

16 As Daniel Schönberger noted, "What would be so negative about robot-creation falling into the public domain anyway? Might it not be seen as a chance to give birth to new artistic genres and whole new areas of innovation, where humans could build freely upon initial machine-output? The fruits of AI should be used for the good of society." See: Daniel Schönberger, 'Deep Copyright: Up – And Downstream Questions Related to Artificial Intelligence (AI) and Machine Learning (ML)' (2018) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3098315> accessed 15 November 2022.

17 Daniel J. Gervais, (n 10) 2060.

18 Victor M. Palace, "What if Artificial Intelligence Wrote This? Artificial Intelligence and Copyright Law" (2019) 71(1) Florida Law Review 217, 242.

19 Tim W. Dornis, (n 9).

20 Patrick Zurth, (n 4).

21 Josef Drexl et al., (n 5).

22 Nina I. Brown, 'Artificial Authors: A Case for Copyright in Computer-Generated Works' (2019) 20(1) Science and

"non-protection of emergent works lowers the overall level of investment in technical innovation and, ultimately, the actual production of creative AI."[23] Legal protection is needed to "promote the development of AI systems' programming and encourage entities to control the functions of AI systems and to take responsibility for their outcomes."[24] The criterion of protecting economic interests and supporting investments is also the basis of the conclusion in the EU Resolution (para 15).[25] It is quite possible to assume that without the protection of their economic interests, investors will not be interested in funding further AI development and research which could result in a significant reduction in the development of this field, and its potential social benefits will not be achieved. However, this assumption does not find practical confirmation.

15 First, the lack of legal protection does not have a negative impact on the development of AI; on the contrary, the scope of investment in this area is constantly increasing. Only in the USA, funding for AI companies has increased from a little under 300 million U.S. dollars in 2011 to around 16.5 billion in 2019;[26] the global AI software market is forecast to reach around 126 billion U.S. dollars by 2025.[27]

16 Second, belonging of AI-generated objects to the public domain does not create obstacles to their participation in the market circulation and does not limit the possibility of their sale in comparison with protected works. So far, there are no known negative market phenomena caused by the lack of legal protection of AI-generated objects. In this context, the opinion was expressed that recognition of rights to AI-generated objects "would be justified only if solid empirical economic analysis were to reveal that the absence of legal exclusivity negatively affects overall economic welfare."[28] That is, there must be a certain market failure that could be overcome by introducing legal protection of the results of autonomous operation of the computer but there is no data on such market failure yet.

17 Third, investors have not yet taken the initiative to obtain rights to AI-generated objects. It is fair to say that "whoever intends to establish a monopoly through an exclusive right has to prove its economic efficiency and necessity";[29] this is the approach that has been historically developed in the field of intellectual property. In particular, in the 15th century, after the invention of the printing press, publishers secured privileges that protected their investments and limited competition with other publishers. At the end of the 17th century, there was a powerful movement to protect the interests of authors which culminated in the adoption in 1710 of Queen Anne's Statute, the first copyright law.[30] Similarly, in due time, producers of phonograms and broadcasting organizations proved that they need protection from the use of their phonograms and broadcasts by third parties; this resulted in the adoption of the Rome Convention in 1961 which established legal protection of related rights.[31] As for AI investors, there have been no such initiatives from their side so far. It is paradoxical that this issue is actively discussed by scientists, while it is not known whether investors themselves seek legal protection for autonomous creations of their ward computers.

18 Thus, the purpose of investment protection is not yet supported by any data that would indicate the need to guarantee such protection. I am inclined to believe that the interests of investors can serve as a basis for providing them with legal means of influencing the use of objects generated by AI and the possibility of obtaining economic benefits from it. Nevertheless, there is currently no evidence that this is really

Technology Law Review 1, 5.

23 Tim W. Dornis, 'Artificial Creativity: Emergent Works and the Void in Current Copyright Doctrine' (2020) 22 Yale Journal of Law & Technology <https://yjolt.org/sites/default/files/22_yale_j.l._tech._1_ai_creativity.pdf> accessed 15 November 2022.

24 Shlomit Yanisky Ravid, (n 8) 701.

25 EU resolution (n 1).

26 Bergur Thormundsson, 'Artificial Intelligence funding United States 2011-2019' (2022) <https://www.statista.com/statistics/672712/ai-funding-united-states/> accessed 15 November 2022.

27 Bergur Thormundsson, 'Artificial intelligence software market revenue worldwide 2018-2025' (2022) <https://www.statista.com/statistics/607716/worldwide-artificial-intelligence-market-revenues/> accessed 15 November 2022.

28 Christian Hartmann et al., 'Trends and Developments in Artificial Intelligence. Challenges to the Intellectual Property Rights Framework: Final report' (European Commission: 2020), 95 <https://www.ivir.nl/publicaties/download/Trends_and_Developments_in_Artificial_Intelligence-1.pdf> accessed 15 November 2022.

29 Patrick Zurth, (n 4).

30 Delia Lipszyc, *Copyright and neighbouring rights* (UNESCO Publishing 1999) 39-40.

31 Guide to the Rome Convention and to the Phonograms Convention (1981) WIPO publication No. 617(E) 10-12 <https: wipo.int/edocs/pubdocs/en/copyright/617/wipo_pub_617.pdf> accessed 15 November 2022.

necessary for investors. Taking into account that legal protection provides not only benefits but also imposes certain obligations on the right holder, including liability for possible violations committed in the course of AI functioning, investors may not wish to receive such protection at all.[32]

19 Another approach, which supports the need for the legal protection of the results of the autonomous functioning of a computer, focuses on market competition. It is believed that consumers may confuse the results of human creativity with cheaper computer creations, which can create unfair competition.[33] It is impossible to reliably predict what the competition will be like when more AI-generated objects appear on the market; at the same time, there is no reason to believe that they will be in greater demand than works due to lower cost or any other reasons. The consumers' choice of a creative product is determined by various factors and the low cost of the product is decisive only for a certain part of consumers. The demand for creative products, regardless of their origin, will always be different, some of them become part of mass culture, and some occupy only a small niche. Furthermore, there are no studies or other data that would indicate that there is a real threat to market competition due to the fact that computer creations are not protected.

20 An additional argument for the introduction of the legal protection is that its absence may encourage abuse. Human authors who have created works using AI technologies can hide the AI's involvement in the creation of the work because it "would make the resulting works unprotectable."[34] Investors may start claiming authorship of objects created by AI and get copyright protection on things they did not create[35] while the true origin of such objects will be deliberately concealed.[36] This is quite realistic if the object has commercial potential for use similar to the use of the work, and there is no mechanism for its protection. Taking into account the presumption of authorship according to which, until proven otherwise, the person whose name appears on work is considered the author, and the AI will not be able to prove that the creation of this object is the result of the autonomous operation of a computer. On the other hand, the availability of the legal protection for AI-generated objects will not necessarily avoid abuse. If the duration of such protection is relatively short, certain investors may assign authorship to computer creations because long-term copyright protection will be more profitable for them. Accordingly, the goal of avoiding theoretically possible abuses does not seem sufficient to explain the expediency of legal protection of AI-generated objects.

21 The above shows that it is difficult to find a convincing and properly confirmed argument in favour of the introduction of the legal protection for autonomous computer creations. However, given that the European Parliament has expressed such an intention, the question of a possible legal regime of protection remains relevant and needs to be answered.

32 It is worth supporting the opinion that "if the grant of rights in robot creations implies liability for potential infringements of third party rights, robot users may find the acquisition of rights no longer attractive. The risk of liability for infringement may thwart the attainment of the goals of incentive theory. Instead of seeing the grant of protection as a stimulus for stronger efforts to develop the full potential of creative AI machines, robot users may eschew the right holder status to escape liability for potential infringements". See: Martin Senftleben and Laurens Buijtelaar, 'Robot Creativity: An Incentive-Based Neighboring Rights Approach' (2020) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3707741> accessed 15 November 2022.

33 In particular, Anthoula Papadopoulou explained a need for a specific legal protection of AI-generated objects by the proper functioning of competition rules: "once a work or an AI-generated output is exploited, it is on a market, which would thus justify applying competition law. In any case, the perception of the AI output as a creative one by the average consumer combined with the expectedly low price compared to human creations of art could possibly create conditions of unfair competition and consumer deception". See: Anthoula Papadopoulou, 'Creativity in crisis: are the creations of artificial intelligence worth protecting?' (2021) 12(3) JIPITEC para 21.

34 Enrico Bonadio and Luke McDonagh, 'Artificial Intelligence as Producer and Consumer of Copyright Works: Evaluating the Consequences of Algorithmic Creativity' (2020) 2 Intellectual Property Quarterly <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3617197> accessed 15 November 2022.

35 In this regard, Tim W. Dornis noted that owners and users of autonomous AI applications "will instead portray themselves (as humans) as authors or creators of the emergent works at issue. It will be hard, if not impossible, to solve this problem in practice since the relevant facts are virtually always private. Quite paradoxically, this practical disincentive may ultimately result in the acquisition of full copyright protection for emergent works – particularly if the AI owner or user succeeds in establishing herself as the author or creator". See: Tim W. Dornis, (n 23).

36 Kalin Hristov, 'Artificial Intelligence and the Copyright Dilemma' (2017) 57(3) IDEA 431, 450.

D. Potential regimes of the legal protection of AI-generated objects

22 There are three main theories regarding the regime that will be most justified and appropriate for the protection of AI-generated objects: 1) copyright; 2) related (neighbouring) rights which are valid in European countries for the protection of performances, phonograms, broadcasts, and some other objects; 3) a separate special regime. Further analysis will demonstrate that the legal protection of computer creations if it is considered appropriate and necessary, requires the development of a special legal regime that does not interfere with the intellectual property paradigm.

I. Copyright

23 The copyright system is formed around the figure of the author, a person who created a work through their creative efforts. The laws of many European countries, in particular, Bulgaria,[37] Latvia,[38] Lithuania,[39] Malta,[40] Romania,[41] Slovakia,[42] Slovenia,[43] Spain,[44] Switzerland,[45] directly determine that an author is only a natural person. In other countries where there is no such specification, the limitation of the circle of authors to natural persons follows from the provision of the general term of copyright which is the life of the author and a certain period after their death. The categories "life" and "death" are characteristic only of living beings, and since animals are recognised by the legislation of most countries as a special object of law and not a subject and participant in legal relations, by the method of logical exception in the category of "author" only human beings remain.

24 AI does not fit into the copyright paradigm because it is not human and, unlike humans, can exist indefinitely. This, however, did not prevent the emergence of various theories regarding the extension of copyright to computer creations. It was proposed to grant copyright for autonomous computer creations to the AI itself,[46] or to the developer,[47] or to the end user,[48] or to consider that the object generated by the AI is a work for hire.[49] There are many objections to such proposals, justified by the fact that the purpose of copyright is to encourage human creativity[50] while

37 Art. 3(1) of Law on copyright and related rights of Bulgaria <https://wipolex.wipo.int/en/text/544110> accessed 15 November 2022.

38 Art. 1(1) of Law on copyright of Latvia <https://wipolex.wipo.int/en/text/520008> accessed 15 November 2022.

39 Art. 6(1) of Law on copyright and related rights of Lithuania <https://wipolex.wipo.int/en/text/349855> accessed 15 November 2022.

40 Art. 2 of Copyright act of Malta <https://wipolex.wipo.int/en/text/355524> accessed 15 November 2022.

41 Art. 3(1) of Law on copyright and related rights of Romania <https://wipolex.wipo.int/en/text/545969> accessed 15 November 2022.

42 Art. 13(1) of Law on copyright and related rights of Slovakia <https://wipolex.wipo.int/en/text/542163> accessed 15 November 2022.

43 Art. 10 of Copyright and related rights act of Slovenia <https://wipolex.wipo.int/en/text/582063> accessed 15 November 2022.

44 Art. 5(1) of Law on intellectual property of Spain <https://wipolex.wipo.int/en/text/584952> accessed 15 November 2022.

45 Art. 6 of Federal act on copyright and related rights of Switzerland <https://wipolex.wipo.int/en/text/584729> accessed 15 November 2022.

46 According to Tess Buckley, "AI is creative in its own right: therefore, it should have partial ownership/authorship of its creations. As a creator, autonomous robots should receive the copyrights of that which it produces". See: Tess Buckley, 'Computers, Creativity and Copyright: Autonomous Robot's Status, Authorship, and Outdated Copyright Laws' (2019) <https://montrealethics.ai/computers-creativity-and-copyright-autonomous-robots-status-authorship-and-outdated-copyright-laws/> accessed 15 November 2022.

47 In the opinion of Atilla Kasap, "the programmer who invested skill, labor, and other resources to design the AI-system producing the creative output is the best candidate for authorship as far as copyright law is concerned". See: Atilla Kasap, 'Copyright and Creative Artificial Intelligence (AI) Systems: f Twenty-First Xentury Approach to Authorship of AI-Generated Works in the United States' (2019) 19(4) Wake Forst Journal if Business and Intellectual Property Law 335, 369.

48 Robert C. Denicola, 'Ex Machina: Copyright Protection for Computer-Generated Works' (2016) 69 Rutgers University Law Review 251, 286-287.

49 Annemarie Bridy, 'The Evolution of Authorship: Work Made by Code' (2016) 39 Columbia Journal of Law & the Arts 395, 400; Shlomit Yanisky Ravid, (n 8) 707-717; Kalin Hristov, (n 36) 446-451.

50 In words of Daniel J. Gervais, "copyright is a legal mechanism designed to help produce works that are the result of a human creative process; the incentive is for humans to engage in the process not knowing whether the result will

a computer creation made without direct human intervention does not meet the conditions of copyright protection. Joining these objections, I would like to give reasons why AI does not create works that could be protected by copyright.

25 There is no definition of a work in international copyright treaties because it is a philosophical and universal category rather than a legal one. Therefore, most national copyright laws do not interpret the concept of a work, but only provide a non-exhaustive list of them. To some extent, I can agree with the opinion that "the work is simply not subject to an all-purpose formal definition",[51] after all, each type of work has its own characteristics which cannot be reflected in one common definition. However, a general concept of a work should exist since it is one of the central categories of copyright.

26 Many European states explain in their legislation that a work is the result of creative activity;[52] an original intellectual creation;[53] an original intellectual creation having an individual character.[54] All these definitions express the main essence of the work: it is the result of the intellectual creative activity of the author. Copyright is indifferent to the process of creating a work and the idea behind it; it extends only to the result that crowned the implementation of a particular idea. At the same time, not every result of a human activity receives legal protection but only those that appear as a product of creative efforts.

27 The concept of creativity is one of the most complicated. Different theories of creativity treat it from different positions and with different criteria, so there is no generally accepted definition that will suit all possible cases. In terms of copyright, creativity is essentially a reflection or transformation of reality, embodied in a certain form. The reflection of reality occurs when the author embodies prototypes of objects, fragments of nature, or other elements of human life that exist in the real world. The transformation of reality takes place when the author invents something that does not exist in reality, and the work itself may be aimed at forming such a result (for example, the invention of new technology), or this result may not appear in the real world (for example, a fantastic creature from another planet).[55] Copyright does not explain the essence of creativity but widely applies its main feature, namely, originality, as a criterion for granting copyright protection.

28 In the EU, the concept of originality was first formulated in Directive 91/250/EEC regarding computer programs that shall be protected if it is original in the sense that it is the author's own intellectual creation (Art. 1(3)).[56] Later, the copyright protection of photographs (Art. 6 of Directive 93/98/EEC[57]) and databases (Art. 3(1) of Directive 96/9/EC[58]) was determined according to the same criterion. In sum, the definition "the author's own intellectual creation" "constituted a European criterion for originality, at least for these categories of works"[59] and some states have reflected this provision in their legislation.[60] The CJEU explained originality as having several components: "the work is original in the sense that it is its author's own intellectual creation; an intellectual creation is an author's own if it reflects the author's personality; if the author

be a blank page or the Great American Novel". See: Daniel J. Gervais, (n 10) 2093. Martin Senftleben and Laurens Buijtelaar noted that "copyright protection is justified as far as it is necessary to provide the incentive needed to encourage the creation and dissemination of creative expression". See: Martin Senftleben and Laurens Buijtelaar, (n 32).

51 Michael J. Madison, 'The End of the Work as We Know It' (2012) 19(2) Journal of Intellectual Property Law 325, 332.

52 Art. 3(1) of Law of Bulgaria (n 37); Art. 2(1) of Law on copyright and related rights of Czech Republic <https://wipolex.wipo.int/en/text/546060> accessed 15 November 2022; Art. 1(2) of Law of Latvia (n 38); Art. 2(19) of Law of Lithuania (n 39).

53 Art. 1(1) of Federal law on copyright in literary and artistic works and related rights of Austria <https://wipolex.wipo.int/en/text/503811> accessed 15 November 2022; Art. 2(1) of Law on copyright, related rights and cultural matters of Greece <https://wipolex.wipo.int/en/text/480967> accessed 15 November 2022.

54 Art. 5(1) of Copyright and related rights act of Croatia <https://wipolex.wipo.int/en/text/537702> accessed 15 November 2022; Art. 2(1) of Law of Switzerland (n 45).

55 Anna Shtefan, (n 7) 725.

56 Council Directive 91/250/EEC of 14 May 1991 on the legal protection of computer programs, *OJ L 122.*

57 Council Directive 93/98/EEC of 29 Oct. 1993 harmonizing the term of protection of copyright and certain related rights, *OJ L 290.*

58 Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, *OJ L 77.*

59 Tatiana Synodinou, 'The Foundations of the Concept of Work in European Copyright Law' in Synodinou (ed.) *Codification of European Copyright, Challenges and Perspectives* (Kluwer Law International: 2012), 97.

60 In particular, according to Art. 4(2) of Copyright act of Estonia, a work is original if it is the author's own intellectual creation <https://wipolex.wipo.int/en/text/510476> accessed 15 November 2022.

was able to express their creative abilities in the production of the work by making free and creative choices".[61]

29 In other jurisdictions, the interpretation of originality may differ slightly. Nevertheless, so far there is no other understanding of it than the independent creation of a work and the creative choice or expression of the author.[62] Originality lies in the fact that the author independently selects the way to implement their idea in the work, not copying the works of other authors but following their own path. Each author has their own system of values, a spiritual world, aspirations, feelings and experiences, and each work contains a particular mental and emotional contribution of the author who reflects their personality through their work.[63]

30 Unlike a human, AI has only a built-in algorithm, according to which it is capable of performing specific tasks by processing information, analysing it, and giving results. Works of a particular type are loaded into AI designed to generate objects similar to copyrighted items. These works serve as the subject of analysis and a pattern based on which an object with the same expression appears. The computer performs algorithmic calculations and makes a choice that results in text, images, music, etc, by analysing and comparing specific data. Any object generated by AI is the result of synthesizing certain data based on its analysis.[64]

31 Generating a particular object in the course of its operation, AI makes a series of choices. However, is there any reason to believe that any of these choices are creative? This question is quite rightly asked by researchers who do not believe in the possibility that the results of the autonomous activity of a computer program can be protected by copyright. According to a fair statement by Anthoula Papadopoulou, "the free and creative choices that leave the author's personal touch, as established by the CJEU, cannot be equated with random outputs by neural networks".[65] Indeed, there is no evidence that AI makes something more than purely technical choices based on its calculations. Unlike a person, AI is not aware of its activity and does not manage it but only obeys the tasks assigned to it and executes its programmed commands. Every choice it makes is the fulfilment of a function provided for in its codes, not the result of its own will. There is even less reason to believe that the computer expresses something in its creation. There is no deep meaning or subtext in an object created by AI because a computer has no personality, inner self, feelings, or beliefs that could affect the work as it does in human creation. Thus, an AI-generated object is not original because there is no creative choice behind it, and it does not contain the imprint of any personality. Therefore, AI is not capable of creating works that could be protected by copyright.

32 The mission of copyright is focused on people and their creativity. This priority should not disappear under the influence of the need to protect the economic interests of persons investing in AI. Even if in the future AI is developed that can independently decide to generate a certain object and do things that are not provided for by its program codes, it will still remain an imitation of creativity. Therefore, I cannot agree with the thesis that "the traditional solution to look for the human behind the creative process is untenable in the long run".[66] A computer will never have an analogue of a human personality and will not be able to feel the need for self-expression, and therefore its creations will lack the personal touch that characterises human creations. A computer will never become a full-fledged author: as Ana Ramalho aptly observed, "real authorship seems to be linked to the quality of being human"[67] which is not possible with the most advanced technology.

33 No matter how technology develops further, AI will never acquire human traits and characteristics, and its work will never replace human creativity. Currently, AI is only able to generate something by using something that humans have already created. Even if future AIs become autonomous in making the decision to create an object and are able to go beyond

61 Judgment in *Eva-Maria Painer v Standard Verlags GmbH*, Axel Springer AG, Süddeutsche Zeitung GmbH, SPIEGEL-Verlag Rudolf AUGSTEIN GmbH & Co KG and Verlag M. DuMont Schauberg Expedition der Kölnischen Zeitung GmbH & Co KG, C145/10, ECLI:EU:C:2011:798, para 87–89.

62 For instance, in the USA originality means that the work was independently created by the author (as opposed to copied from other works), and that it possesses at least some minimal degree of creativity (the selection should have a modicum of creativity; there is nothing remotely creative about a work that merely reflects an age-old practice, firmly rooted in tradition and so commonplace that it has come to be expected as a matter of course). See: Feist Publications, Inc, v Rural Telephone Service Co, 499 US 340 (1991), para 10, 55, 57.

63 Anna Shtefan, (n 7) 727-728.

64 Anna Shtefan, (n 7) 727.

65 Anthoula Papadopoulou, (n 33) para 13.

66 Shlomit Yanisky Ravid, (n 8) 726.

67 Ana Ramalho, 'Will robots rule the (artistic) world? A proposed model for the legal status of creations by artificial intelligence systems' (2017) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2987757> accessed 15 November 2022.

the limits of their programmed functionality, they will not learn to make creative choices. It requires a human personality, soul, and inner world, which cannot be created by technology. Creativity is the exclusive prerogative of humans while AI can only imitate creative processes. Hence, copyright must remain the legal regime only for the protection of human creativity.

II. Related (neighbouring) rights

34 In European countries, related (neighbouring) rights protect objects that do not belong to works, namely, performances, phonograms, audio-visual recordings, broadcastings, and some other objects that are individually determined by the legislation of certain states. These objects do not require originality and human authorship that quite logically led to the formation of a proposal to protect AI-generated objects with related rights. This decision is advantageous because "it allows the introduction of a period of protection that is long enough to enable the user of a creative robot to recoup his investment, but still short enough to prevent unnecessary obstacles to transformative remix activities that support cultural follow-on innovation".[68] In this regard, two approaches have been developed on how to implement this proposal.

35 The first idea boils down to extending related (neighbouring) rights to similar objects generated by AI. Sound recordings can be protected as phonograms, audio-visual recordings may qualify for protection under the film producer's right, and broadcasts may find protection under the related rights of broadcasters.[69] This suggestion fails to consider that only some AI-generated objects fall into the category of traditional objects of related (neighbouring) rights. These are, in particular, texts and paintings, and if in the future AI begins to generate architectural projects or computer programs, the issue of their legal protection will remain unresolved.

36 The second idea is to create a category of new related (neighbouring) rights that would apply to all AI-generated objects. Within this approach, it is proposed "requiring substantial investment as a pre-condition"[70] while "the duration can be shorter and the exclusive rights granted can be lesser when compared with copyrighted works."[71] In this way, it is possible to solve the issue of protection of texts, pictures, and other creations that differ from traditional objects of related rights. However, on the other hand, there may be a problem in distinguishing between "ordinary" and "special" related (neighbouring) rights; it will be unclear which object is created by humans and which is generated by AI. There are also doubts about the proposed criterion for granting protection, namely, the substantial investment. Evaluation of such investments can be quite problematic, as there is no generally accepted understanding of what amount of investment in the creation and operation of AI is considered significant enough. In addition, investors may not wish to disclose such information, they will refuse to evaluate the investment and, accordingly, to obtain legal protection. This calls into question whether the application of such a criterion could be useful.

37 New related (neighbouring) rights are actually a special regime of legal protection that has a common name but a completely different content compared to related (neighbouring) rights protected in Europe. Taking into account that there are other proposals to apply a special regime to AI-generated objects, it is advisable to consider these proposals separately and in more detail.

III. A special regime

38 In the field of intellectual property, a special regime is usually associated with sui generis right. It can be defined as a special kind of right that operates within a certain regime and defines particular aspects of legal regulation that apply in individual cases. European legislation establishes such a right for one object, namely, databases. According to the provisions of Directive 96/9/EC on the legal protection of databases, the sui generis right is granted to ensure the protection of substantial investment that may consist in the deployment of financial resources and/or the expending of time, effort, and energy. The objective of this sui generis right is to give the maker of a database the option of preventing the unauthorized extraction and/or re-utilization of all or a substantial part of the contents of that database.[72]

68 Martin Senftleben and Laurens Buijtelaar, (n 32).

69 Christian Hartmann et al., (n 28) 117.

70 Anke Moerland, 'Artificial Intelligence and Intellectual Property Law' (2022) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4203360> accessed 15 November 2022.

71 Tianxiang He, 'The Sentimental Fools and the Fictitious Authors: Rethinking the Copyright Issues of AI-Generated Contents in China' (2019) 27(2) Asia Pacific Law Review 218, 235.

72 Para 40, 41 of the Preamble, Art. 7(1) of the Directive 96/9/EC (n 58).

39 In 2018, the European Commission evaluated the effectiveness of this Directive and noted that a sui generis right has overall policy potential and the limited range of problems it currently generates for stakeholders. At the same time, despite providing some benefits at the stakeholder level, the sui generis right continues to have no proven impact on the overall production of databases in Europe, nor on the competitiveness of the EU database industry.[73] There are doubts about the effectiveness of this special regime since its economic impact "was unproven, and that it comes perilously close to an undesirable property right in data as such".[74] Nevertheless, the idea that objects generated by AI without direct human participation can be protected by a sui generis right has become quite widespread. Some studies consider the possibility of applying the provisions of Directive 96/9/EC to AI-generated databases.[75] Meanwhile, there are justifications for the development of a separate special regime for the protection of autonomous computer creations—that is, a new sui generis right.

40 The advantages of a sui generis right can be explained by the fact that this regime will provide only certain limited protection that will allow investors to influence the possibility of using AI-generated objects, and at the same time will not create risks of devaluation of human creativity. As the supporters of this approach justify, this "could reinforce investment without pressuring and deconstructing concepts such as originality and creativity",[76] "would allow for more flexibility and prevent the mass production of work that would create a reverse merger situation."[77] Indeed, the development of special legislative provisions that do not interfere with the intellectual property paradigm and do not create conflicts with the regime of the legal protection of works may be the most appropriate solution to protect the results of the autonomous functioning of a computer. At the same time, the summary of existing scientific developments suggests that in general there is no clear concept of a special regime for AI-generated objects but there are a number of questions that need to be answered.

41 First, it is necessary to determine which objects may be subject to legal protection. If we are referring to all objects that can be created by AI, this could potentially include those that should not be protected at all by any regime that provides a monopoly on their use. In particular, reports of current events in the form of ordinary press information are excluded from the scope of copyright due to lack of originality, but if such reports made by AI fall under a sui generis right, this will prevent the free dissemination of information. Therefore, it is important to provide a list of AI-generated objects that will not be protected by sui generis right.

42 Second, there is still no consensus on whether any criteria should be applied for the protection of these objects. There are opinions that for attracting the sui generis protection, "an originality test as assessed and interpreted objectively and contextually would be appropriate";[78] to be eligible for the sui generis protection, AI-generated works "should be independently created by an AI system with contributions from the system's developer and possess a minimal degree of creativity" in the meaning that "it cannot consist solely of designs that are staple, commonplace, or familiar in the semiconductor industry, or variations of such designs, combined in a way that, considered as a whole, is not original."[79] These proposals contradict the general idea of establishing a separate legal protection regime that should not apply the categories of authorship, creativity, and originality. Given that a computer is not capable of making a creative choice, it is difficult to justify what exactly should be the basis for assessing the presence of a minimum degree of creativity. Therefore, an attempt to adapt the copyright criterion of originality to computer creations does not seem to be the best idea. Another potential condition that could determine the protectability of AI-generated objects is a substantial investment, as provided by Directive

73 European Commission, Commission Staff Working Document: Executive Summary of the Evaluation of Directive 96/9/EC on the Legal Protection of Databases, SWD (2018) 147 final (Apr. 25, 2018) <https://digital-strategy.ec.europa.eu/en/library/staff-working-document-and-executive-summary-evaluation-directive-969ec-legal-protection-databases> accessed 15 November 2022.

74 Mireille van Eechoud, 'Please share nicely – From Database directive to Data (governance) acts' (2021) Kluwer Copyright Blog <http://copyrightblog.kluweriplaw.com/2021/08/18/please-share-nicely-from-database-directive-to-data-governance-acts/> accessed 15 November 2022.

75 Guido Noto La Diega, 'Comments on WIPO's 'Draft Issues Paper on Intellectual Property and Artificial Intelligence' (WIPO/IP/AI/2/GE/20/1)' (Apr. 3, 2020) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3551908> accessed 15 November 2022.

76 Anthoula Papadopoulou, (n 33) para 22.

77 Vicenç Feliú, 'Our Brains Beguil'd: Copyright Protection for AI Created Works' (2021) 25(2) Intellectual Property and Technology Law Journal 105, 124.

78 Enrico Bonadio and Luke McDonagh, (n 34).

79 Haochen Sun, 'Redesigning Copyright Protection in the Era of Artificial Intelligence' (2022) 107(3) Iowa Law Review 1213, 1244.

96/9/EC on databases.[80] However, as noted above, the need to prove a significant amount of investment may discourage potential rightsholders from obtaining legal protection. Thus, the only reasonable criterion for the application of a sui generis right so far remains that the object is generated by a computer without direct human intervention.

43 Third, the question of who exactly should acquire a sui generis right to the results of the autonomous functioning of the computer remains debatable. Different points of view have been expressed on this issue. In particular, it was concluded that a sui generis right should "encourage the creation of these technologies (through the offer of exclusive rights)",[81] that is, it should be guaranteed to AI developers. Also, the possibility of joint ownership between developers and users was considered.[82] There is also an opinion that the acquisition of the right should be carried out "in a combination of the user of the system, programmer of the learning algorithm of the creative agent and/or the creative agent itself can become a reality in a sui generis system".[83] By analogy with the regime of works made for hire, it is proposed to consider the user as a person who may have a sui generis right, but since the user is usually an employee of the company that owns the AI system, this company will acquire the rights on generated objects.[84] Another idea is that "economic rights derived from the AI protection should be conferred to the employer, investor or another person for whom the work was prepared or by whom the arrangements necessary for the creation are undertaken."[85]

44 In my view, a sui generis right should be guaranteed to the AI owner analously to that of a broadcasting organisation, which acquires related rights to the broadcast directly and not as a result of their transfer from employees. If legal protection of AI-generated objects is justified, it seems that it will be largely grounded in the need to protect economic investments. The owner of the AI usually finances the creation of AI (or buys it) and solves financial and organisational issues related to the functioning of AI. While the input of developers is crucial to the emergence of AI, without financial and organisational support, the efforts of developers could hardly have resulted in the emergence of the amount of AI that is currently seen. In addition, developers and end users receive remuneration for their work as company employees or independent specialists engaged in the contracts while the AI owner invests large resources without receiving remuneration for it. Therefore, it is quite difficult to find an explanation for why economic benefits from the use of a computer creation should be granted to employees, and not to the person who provided the economic preconditions for these benefits to appear at all.

45 Fourth, the scope of rights that can be granted in relation to an AI-generated object needs to be clarified. Images, texts, sound recordings, and other results of AI activity can be used in the same way as works or objects of related rights with the same form of expression; that is, the relevant ways of using works and objects of related rights can be applied to AI-generated objects. However, the question remains whether the sui generis regime should grant the rightsholder a monopoly on the modification of computer creations by analogy with copyright. Thus, the concept of a sui generis right can be formed in one of two ways: the right holder receives the whole range of economic rights, including the right to allow the reworking of a computer creation, or the right holder receives protection only against literal copying, while the reworking of the protected object can be freely carried out by the public. Now there is no decision on which approach will be the most reasonable and appropriate. In addition, the researchers mostly do not mention whether sui generis right can be subject to exceptions and limitations by analogy with copyright and related rights. It seems that there are no obstacles to citing AI-generated objects, reporting them in the news, using them for educational purposes, and even parodying them but this aspect also needs to be clarified.

46 Fifth, it is necessary to decide what should be the term of validity of the sui generis right so that it could satisfy the economic interests of the right holder. This issue is extremely important since the duration of protection may determine whether it makes sense to provide such protection at all. In the doctrine, it is proposed that the right to AI-generated objects

80 Art. 7(1) of the Directive 96/9/EC (n 58).

81 Enrico Bonadio and Luke McDonagh, (n 34).

82 Celine Melanie A. Dee, 'Examining Copyright Protection of AI-Generated Art' (2018) 1 Delphi 31, 37.

83 Madeleine de Cock Buning, 'Artificial intelligence and the creative industry: new challenges for the EU paradigm for art and technology by autonomous creation' in Barfield and Pagallo (eds.) *Research Handbook on the Law of Artificial Intelligence* (Edward Elgar: 2018) 511, 532.

84 Anthoula Papadopoulou, (n 33) para 32.

85 Javiera Cáceres B. and Felipe Muñoz N., 'Artificial Intelligence, A new frontier for intellectual property policymaking' (2020) 9(2) Journal of Intellectual Property Law and Management 108, 126.

should be granted for two years,[86] three years,[87] ten years[88] or fifteen years.[89] It is also possible to take as a basis the twenty-five-year term defined in Article 4 of Directive 93/98/EEC on the protection of rights to a work that is first published after the expiry of its copyright protection.[90] Researchers express solidarity that this period should be relatively short[91] "in line with rapid technological advancements in the field."[92] At the same time, the question arises whether the legal regime lasting several years will be attractive for rightsholders.

47 If the sui generis right will provide protection only against literal copying for a period of two years while the rightsholders will be liable for violations committed by the computer in the content of the object, it is very doubtful that they will be interested in such protection at all. At the same time, a term of legal protection of twenty-five years may seem too long given the rapid development of technologies. On the other hand, if a certain AI-generated object has commercial potential and remains interesting for the audience after several years, the rightsholder may wish to keep the rights to this object longer than the rights to an object that has not shown commercial potential. Therefore, it may be more appropriate to adopt an approach similar to trademark rights, where initial protection is granted for a short period, e.g., five years, but can be renewed by the right holder for a further five years. Perhaps, in this case, it will be necessary to limit the total term of validity of the sui generis right not to exceed twenty-five years or another term justified by the interests of society. Although this will require registration of rights to each object and development of the procedure for such registration, in my opinion, this approach may deserve attention. It will allow the rightsholders to decide independently whether they want to have legal protection of computer creations and bear the risks associated with it.

48 Hence, although a special regime for the legal protection of autonomous computer creations is being actively discussed, it is still very far from having a clear concept. While the above considerations may to some extent contribute to the improvement of this concept, it should be recognised that the theoretical developments in this area are still very different and too controversial to be used as a basis for the adoption of relevant legislation if such a need is confirmed.

E. Concluding remarks

49 AI has changed the world and continues changing it. Images, music, drawings, and other similar objects generated by AI without human intervention have become a great challenge for the legal systems of the world as they do not fit into the existing paradigms of legal protection. It is not yet confirmed whether protection of such AI-generated objects is really needed or they should remain in the public domain. Data on AI investments show that this sector is developing rapidly and successfully regardless of the fact that investors cannot influence the use of objects autonomously generated by their wards computers. Assumptions about potential risks to the market and threats to normal competition that may arise as a result of the lack of legal protection of these objects are not yet supported by studies that would indicate the reality of such risks and threats. Other arguments in favour of granting legal protection to computer creations also raise doubts.

50 Despite a large number of scientific proposals, the optimal legal model that will satisfy both the interests of investors and society has not yet been developed. This article puts forward that the implementation of the protection of objects generated by AI without human intervention requires the development of a special legal regime and considers its main elements. At the same time, almost all key questions concerning this regime have ambiguous answers so in general we are not yet ready to implement such protection.

86 Anke Moerland, (n 70).

87 Enrico Bonadio and Luke McDonagh, (n 34).

88 Haochen Sun, (n 79) 1245.

89 Javiera Cáceres B. and Felipe Muñoz N., (n 85) 125.

90 Council Directive 93/98/EEC (n 57).

91 Anthoula Papadopoulou, (n 33) para 22.

92 Celine Melanie A. Dee, (n 83) 37.