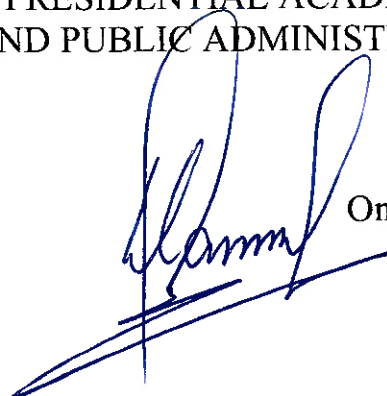


FEDERAL STATE BUDGETARY EDUCATIONAL INSTITUTION OF HIGHER
EDUCATION «RUSSIAN PRESIDENTIAL ACADEMY OF NATIONAL
ECONOMY AND PUBLIC ADMINISTRATION»



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SMART CONTRACT FOR DISPOSING OF EXCLUSIVE RIGHTS TO THE RESULTS OF INTELLECTUAL ACTIVITY

Specialty: 5.1.3. Private law (civil law) sciences

DISSERTATION ABSTRACT

for the degree of Candidate of Legal Sciences

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Moscow – 2026

Relevance of the dissertation research topic.

The socio-political and economic aspects. In the context of the steady development of the modern data economy, issues related to building information and technological ecosystems based on existing intelligent solutions are gaining particular importance and practical value. New digital opportunities have moved from the realm of futuristic hypotheses into real business processes and social relations. As a result, the dynamically growing use of advanced end-to-end technologies in the business environment has created an essential impetus for the digitalization of the dynamics of civil legal relations among participants in the market turnover of tangible and intangible assets.

Automated agreements, or so-called “smart contracts,” are becoming a key instrument of digital civil circulation, providing participants in contractual relations with the opportunity to ensure the guaranteed exercise of rights and the proper performance of obligations. These opportunities are achieved through the principle of self-execution embedded in smart contracts, which does not require any additional expression of will by the parties for legal consequences to arise.

A vector signal for the national digital industry was the first use in the Russian Federation in 2016 of smart contracts between the structures of JSC “Alfa-Bank” and S7 Airlines to ensure automatic settlement with the airline company’s counterparties. Subsequently, smart contract technology was used in financing production and logistics operations, initial public offerings and the transfer of digital assets, business lending, risk insurance and in other economic operations.

The legislative introduction of a new form of national currency — the digital ruble — in the Russian Federation, effective from August 1, 2023, has brought the issue of using smart contracts to the forefront for key players in the financial services market. According to the Central Bank of the Russian Federation, one of the main advantages of the digital ruble for the financial market is the creation of innovative financial products and services (based on smart contracts).

At the same time, the most in-demand and promising area for the application of smart contracts is the civil circulation of rights to the results of intellectual activity. The scientific and technological development of the country, which was noted as a strategic

guideline in the 2024 address of the President of the Russian Federation to the Federal Assembly of Russia, is impossible without the creation of competitive intellectual products and unique industrial developments. Already, a significant share of the added value of modern goods, works and services is generated through expenditures on the intellectual property rights objects that form their basis.

The results of intellectual activity, which have intangible properties, including those transformed into digitally provided objects, can be harmoniously incorporated into contractual relations using a smart contract.

Another key prerequisite for the development of smart contracts in relation to the circulation of intellectual property rights is the creation in our country of a public-state blockchain infrastructure called “RCIS.RF”. This unique digital platform makes it possible to record rights to the results of creative activity and to carry out transactions involving the disposal of exclusive rights in the digital environment (as of 01.09.2026, more than 156,000 dispositive transactions have been completed).

The law-making aspect. Despite the almost revolutionary nature of the smart contract, the national legal system has not yet provided a legislative definition for this legal phenomenon. The first regulatory prerequisites for formulating a definition of a smart contract were laid down by the legislator in Article 309 of the Civil Code of the Russian Federation with the adoption of Federal Law No. 34-FZ dated March 18, 2019. This amendment established the possibility of automatically fulfilling the terms of a transaction using information technologies. However, given the growing prevalence of smart contracts, including in the field of intellectual property, this is clearly insufficient.

In particular, given the incomplete legal regulation of the phenomenon in question, systemic failures may occur during the conclusion and execution of such “smart contracts” concerning intellectual property rights, due to the difficulties of applying traditional civil law institutions to the relationships they generate. The absence of a normative position regarding the legal nature and place of a smart contract within the system of civil law means of regulating social relations may give rise to a mistaken belief that it lacks novelty and may lead to incorrect conflation with other legal categories.

The doctrinal aspect. The lack of conceptual uniformity in legal doctrine does not

contribute to understanding the legal nature of a smart contract as a civil law instrument for disposing of exclusive rights. Operating at the intersection of technical and humanities sciences, researchers define a smart contract using a vast range of terms, ranging from computer code to the classical contractual structure. For the most part, scientific knowledge about smart contracts is formed in a fragmented manner — without taking into account the comprehensive architecture of its scientific and theoretical model, and even less so the influence of traditional rules regulating the civil circulation of intellectual property rights.

In particular, questions regarding the possibility of applying a smart contract to classical methods of contractual management of rights to the results of intellectual activity, including in their modern digital form, remain without a fundamental scientific understanding. The legal regime for the automated digital transfer of exclusive rights between subjects of civil law needs a stable doctrinal foundation, which determines the relevance of this dissertation research.

The law enforcement aspect. Currently, the full-fledged digital disposing of intellectual objects, especially through smart contracts, is associated with numerous practical issues: the digital transactions that are being carried out now are more of a fragile compromise between traditional contractual forms and innovative technologies than automated management tools that meet legal requirements and public expectations.

Therefore, it is not enough to simply create groundbreaking intellectual solutions; it is strategically important to protect them effectively and integrate them into the economic circulation, which is impossible without adequate law enforcement. At present, achieving the goals of fully automating the execution of relevant civil law transactions in practice is somewhat difficult without developing unified rules for the transfer of intangible assets using new information technologies that can guarantee the proper obligatory behavior of the parties.

The degree of scientific and theoretical development of the problem. The works of V. I. Serebrovsky (Issues of Soviet copyright, Moscow, 1956), G. F. Shershenevich (Copyright in literary works, Kazan, 1891), Y. A. Kantorovich (Copyright in literary, musical, artistic and photographic works, Petrograd, 1916), A. L. Makovsky (On the

Codification of Civil Law (1922 - 2006), Moscow, 2010), A. A. Pilenko (The Right of the Inventor, Moscow, 2001) and other scientists are devoted to general issues of the legal protection and use of the results of intellectual activity. Legal scholars V. A. Dozortsev (Intellectual Rights: The concept. System. The Tasks of Codification / Collection of Articles, Moscow, 2003), O. A. Ruzakova (The System of Contracts on the Creation of Results of Intellectual Activity and the Management of Exclusive Rights, Moscow, 2007), and other civil law scholars have made a significant scientific contribution to the comprehensive study of issues related to the contractual disposition of exclusive rights.

Various aspects of a smart contract, including its concept, legal nature, and implementation features for regulating civil law relations, have been the subject of research in the framework of scientific papers by V. S. Belykh, M. O. Bolobonova (The issues of the legal regulation of smart contracts in Russia), E. A. Berezina (Using a smart contract as a legal technology: national and foreign legislative practice), D. E. Bogdanov (The failed technological revolution in contract law: apologetics of the contract traditionalist interpretation), E. E. Bogdanova (Problems of smart contracts application in transactions in virtual property), V. A. Vaipan (Digital law: origins, concept and place in the legal system); L. G. Efimova, I. V. Mikheeva, D. V. Chub (Comparative analysis of doctrinal concepts of legal regulation of smart contracts in Russia and foreign states), M. A. Rozhkova (Smart contract in contractual practice: program code and the "digital superstructure" of a classical contract), A. I. Savelyev (Contract Law 2.0: "smart" contracts as the beginning of the end of classical contract law), G. V. Tsepov (Towards a civil-law theory of smart contracts), M. Y. Yurasov, D. A. Pozdnyakov (Smart contract and prospects for its legal regulation in the era of blockchain technology). The theoretical development of civil law approaches to the concept of a smart contract was significantly influenced by the provisions and results of E. V. Zaynutdinova's dissertation research "Smart Contract in Civil Law" (Novosibirsk, 2022), as well as by the research findings of A. A. Volos (The Concept of the Legal Regulation of Relations Connected with Smart Contracts).

At the same time, comprehensive studies concerning the use of smart contracts in the civil circulation of rights to the results of intellectual activity, including their modern

digital embodiment, are practically non-existent in doctrinal sources — the few works on this topic do not allow for the formation of a comprehensive theoretical perspective on the area of relations under consideration.

In this regard, the completed dissertation should become one of the first steps towards forming a comprehensive architecture of the legal regime for the contractual disposition of exclusive rights to the results of intellectual activity through smart contracts.

The aim of the dissertation research is to develop a comprehensive, scientifically grounded and practice-oriented understanding of smart contracts within the system of contractual disposition of exclusive rights, including identifying and revealing the specific features of the legal regime governing their use in relation to the turnover of rights to the results of intellectual activity, in order to further expand theoretical knowledge and formulate practical recommendations for the application and improvement of legislation.

The stated aim should be achieved by solving the following tasks:

1. To identify and reveal the essential features and conceptual characteristics of a smart contract, as well as the specifics of its legal genesis in the context of the digitalization of society;
2. To develop scientific approaches to determining the legal nature and place of a smart contract within the system of civil law relations;
3. To identify and specify the distinctive patterns and principles of using a smart contract to regulate social relations;
4. To develop and characterize options for the digital formalization of the results of intellectual activity and the exclusive rights to them for their transfer within the framework of a smart contract;
5. To justify the possibility, conditions, and legal significance of digital registration of the results of intellectual activity and the rights to them for the purposes of concluding and executing a smart contract;
6. To determine the possibility of structuring legal relations related to the alienation and pledge of exclusive rights using the structure of a smart contract;

7. To analyze and disclose the key characteristics of the main elements of licensing legal relations mediated by the execution of a smart contract;

8. To consider the scientific and theoretical possibility of applying the smart contract model to other contractual methods of disposing of exclusive rights to the results of intellectual activity.

The object of the research is social relations in the sphere of contractual disposition of exclusive rights to the results of intellectual activity.

The subject of the research is the norms of Russian legislation, the norms of international and foreign legal acts and legal documents, acts of departmental, judicial, and doctrinal interpretation, and materials from judicial and business practice in the field of using smart contracts when exercising exclusive rights to the results of intellectual activity.

The methodological basis of the research is represented by a system of philosophical, general scientific, and specialized legal methods of scientific cognition. In particular, the theoretical understanding of the concept and essential features of a smart contract was based on the principles of dialectics in its ontological and epistemological aspects. The modeling method made it possible to formulate the main approaches to the legal nature of a smart contract and its positioning within the system of civil relations. Within the framework of the joint use of the principles of abstraction and concretization, the specific aspects of using a smart contract as a contractual and legal phenomenon were substantiated. A consistent analysis of the dynamics of civil legal relations in the context of the alienation of exclusive rights, as well as their license, concession, or other disposal, and, consequently, a scientific synthesis of their main elements through the lens of the developed smart contract model, has enabled the identification of its key features and characteristics related to each of the contractual methods of transferring property intellectual rights. The hypothesis method, in conjunction with inductive-deductive cognition, facilitated the legal assessment of the possibility of using the pledge of exclusive rights and the subsequent implementation of the mechanism for enforcing claims against them within the framework of the smart contract concept. Furthermore, the cross-cutting scientific and methodological foundation of the study consisted of the

interplay between comparative-legal and specialized legal methods of cognition, including for understanding the procedure for the digital objectification and registration of the results of intellectual activity, as well as the rights to them, and various aspects of automated transactions involving intellectual property rights.

The information base of the research.

The theoretical basis of the research is the doctrinal works of famous Russian jurists Y.V. Alexandrovsky, S. S. Alekseev, I. A. Bliznets, D. E. Bogdanov, E. E. Bogdanova, M. I. Braginsky, E. V. Vavilin, V. A. Vaipan, L. Y. Vasilevskaya, A. A. Volos, V. V. Vitryansky, A.V. Gabov, E. P. Gavrilov, Y. S. Gambarov, B. M. Gongalo, O. A. Gorodov, D. D. Grimm, O.S. Grin, V. A. Dozortsev, L. G. Efimova, E. V. Zainutdinova, O. S. Ioffe, V. O. Kalyatin, E. E. Kirsanova, O. A. Krasavchikov, O. V. Lutkova, A. L. Makovsky, D. I. Meyer, I. A. Mikhailova, V. B. Nagrodskaya, L. A. Novoselova, K. P. Pobedonostsev, I. A. Pokrovsky, M. A. Rozhkova, O. A. Ruzakova, A. A. Pilenko, A. I. Savelyev, V. I. Serebrovsky, E. A. Sukhanov, E. A. Fleishits, Y. S. Kharitonova, A. Y. Churilov, G. F. Shershenevich, D. Y. Shestakov, N. V. Shcherbak and others.

Among foreign studies, the works of the following authors are of scientific value for preparing a dissertation: D. Allen, S. M. H. Bamakan, O. Bodaghi, L. Chen, M. Colajanni, P. Cuccuru, T. Cutts, T. V. Deryugina, C. Dewi, Z. Duan, A. Ferreira, L. Forbes, F. Ghodoosi, M. El Harrak, R. Hauck, M. Heckelmann, B. Köksal, O. Konashevych, H. Koziol, A. Lane, L. Lessig, S. D. Levi, A. B. Lipton, F. Magnanini, G. Mbah, N. Nezhadsistani, A. Nkechi, A. Ma, A. Papantoniou, M. Poblet, E. R. Porras, H. Putnam, Q. Qu, P. Raj, M. Raskin, R. Sarel, J. Sklaroff, N. Szabo, J. Szczerbowski, J. Wang, I. Yoga and others.

The regulatory basis of the reseach is ground on international agreements, the Civil Code of the Russian Federation, and other federal laws, as well as subordinate regulatory legal acts that regulate relations in the field of protected intellectual and digital rights.

The empirical basis of the dissertation research consists of materials from law enforcement practice, as reflected in the judicial acts of the Constitutional Court of the Russian Federation, the Supreme Court of the Russian Federation, the Supreme

Arbitration Court of the Russian Federation, the Court for Intellectual Rights, other arbitration courts, and foreign judicial structures.

The scientific novelty of the dissertation lies in the development of comprehensive theoretical foundations for the concept of a smart contract, the identification of its obligatory-legal nature and the criteria for distinguishing it as an independent contractual structure, as well as in determining the specific features of the legal regulation of relations concerning the exercise of exclusive rights to the results of intellectual activity within the framework of a smart contract.

Within the framework of the dissertation research, it was possible to systematically develop theoretical, legal, and applied approaches and principles for the automated digital circulation of exclusive rights to the results of intellectual activity, including those related to:

- the emergence and characteristics of digital objects of intellectual rights, the rights to the absolute or limited use of which are transferred within the framework of smart contracts;
- the electronic recording of protected results of intellectual activity and the rights to them in specialized information systems;
- the possibility of concluding and executing classic transactions involving the disposal of exclusive rights (alienation, pledge, licensing permission, etc.) in the form of automated contracts.

Based on the results of the research the author has formulated the following provisions for the dissertation defense:

1. It has been proven that one of the fundamental manifestations of the essence of a smart contract is the technological substitution of trust between the parties to a legal relationship (replacing subjective trust in the counterparty with objective trust in information technologies) through the software automation of the performance of their civil-law obligations. The basis for such performance is the principle of anthropological neutrality (the performance of obligatory actions at the time of their implementation is completely independent of the will of the parties to the transaction — it is carried out by

a deterministic software algorithm), as well as the principle of symmetry of automation (the mutual nature of the parties' obligations, transformed into executable software code).

The provision corresponds to paragraphs 7 and 9 of the passport of the scientific specialty 5.1.3. Private law (civil law) sciences.

2. Two types of smart contracts have been identified and qualified (from the perspective of their legal nature): complementary and substitute.

The legal architecture of the complementary type of smart contract is represented by the actual composition in the form of the parties concluding a specific civil law contract of a certain type, reaching an agreement on the automated execution of all or some obligations, as well as building and implementing on its basis digital transactions that are independent of the parties' will, using information technologies. The agreement on automated performance of obligations itself, as intended for the mutual coordination of the actions of the parties to a contractual relationship in the context of programmatic algorithmization of their conditioned behavior in an information and digital environment, is an organizational agreement.

A substitute-type smart contract is an automated agreement that does not have a mandatory written counterpart; it manifests itself in multiple aspects and can be considered as a transaction with a special form of expression and implementation of the parties' will, as a legal relationship with its own radically new specifics of automated performance of obligations, and also as an electronic document designed to formalize the parties' agreements in an information system.

The provision corresponds to paragraphs 7, 8, 9 of the passport of the scientific specialty 5.1.3. Private law (civil law) sciences.

3. Objective and subjective limits of the use of a smart contract have been identified. To define the scope of objective boundaries, a transactional perspective criterion has been introduced, the essence of which is that a smart contract can be used for the digital formalization of only those obligatory actions whose execution takes place entirely within the information system. The subjective limits are based on the criterion of semantic unambiguity, which excludes the choice of a smart contract's contractual structure for

structuring evaluative and other obligatory provisions that are not intended for programmatic coding.

The provision corresponds to paragraphs 7, 9 of the passport of the scientific specialty 5.1.3. Private law (civil law) sciences.

4. It has been proven that for the conclusion and execution of a smart contract, the objectification of intellectual property and property rights in a virtual environment is carried out through their digital representation using unique (non-fungible) tokens. At the same time, the following objects of civil rights, or a combined set thereof, may be subject to accounting tokenization for further automated disposition in the field of intellectual property:

- rights to material assets embodying the results of intellectual activity. In such cases, the token will certify exclusively the proprietary right to the material medium or a copy reflecting the results of the author's creative work without digital objectification of intellectual rights;

- the rights to digital examples (including originals) of the results of intellectual activity, synthesized, as a rule, using special information and technological means of expressing the author's creative ideas. Here, the token is a means of confirming property rights only to digital intellectual value;

- the exclusive right or the right to use the results of intellectual activity expressed both in material (physical) and digital form.

The provision corresponds to paragraphs 5, 30 of the passport of the scientific specialty 5.1.3. Private law (civil law) sciences.

5. The theoretical and legal feasibility and practical potential of using voluntary registration of the results of intellectual activity in the form of their digital registration in decentralized consortium information systems based on a top-level public-government infrastructure (the RCIS.RF network) for the purposes of automated civil turnover have been substantiated. This approach will make it possible to ensure a transparent and reliable consolidated record of the results of intellectual activity, establish the presumption of authorship and document the intellectual rights, and also resolve the

doctrinal and practical problem of establishing the formal priority of copyright and related rights objects in the context of multiple repositories and information services.

The provision corresponds to paragraphs 5, 30 of the passport of the scientific specialty 5.1.3. Private law (civil law) sciences.

6. It has been proven that it is possible to conclude and execute a smart contract for the alienation of an exclusive right in relation to the following objects:

- results of intellectual activity that are not subject to mandatory state registration or that have not been voluntarily registered with Rospatent (mainly objects of copyright and related rights, as well as trade secrets).

- the results of intellectual activity (inventions, utility models, industrial designs, breeding achievements, computer programs, databases, and integrated circuit topologies) registered with the authorized body, either mandatory or voluntary, provided that it is possible to automatically submit an application to the authorized state body for the registration of the transfer of exclusive rights, or if one of the parties to the smart contract submits the relevant application, accompanied by a written copy of the contract (in the event of a party's refusal to submit a joint application).

The provision corresponds to paragraphs 7, 8 of the passport of the scientific specialty 5.1.3. Private law (civil law) sciences.

7. It has been established that the contractual structure of a smart contract can be used to regulate exclusively those pledge relations in which, in the event of the pledgor's failure to fulfill the secured obligations, enforcement against exclusive rights is carried out out-of-court by means of their automated transfer to the pledgeholder in the information system (*lex commissoria*). This smart pledge with automated execution of the terms of the *lex commissoria* significantly simplifies the process of determining the value of the pledged property, correlating it with the amount of unfulfilled obligations when foreclosure is initiated, and carrying out final monetary settlements between the parties to the automated pledge agreement.

The provision corresponds to paragraphs 7, 8, 9 of the passport of the scientific specialty 5.1.3. Private law (civil law) sciences.

8. Based on the comparison of the features of a smart contract and a licensing agreement, it has been justified to introduce the term “smart license” into scientific discourse to define an electronic agreement between any subjects of civil rights, under which a programmatically deterministic automated transfer of rights to use the results of intellectual activity and digital copies of their implementation (or the provision of conditions for electronic access to them) is carried out, certified by a unique token, within the limits stipulated by the agreement and the token.

The provision corresponds to paragraphs 7, 8 of the passport of the scientific specialty 5.1.3. Private law (civil law) sciences.

The theoretical significance of the dissertation research lies in the possibility of using the author’s provisions and conclusions to improve and develop doctrinal concepts in the field of digital disposition of exclusive rights to the results of intellectual activity within the system of civil law; to form a basic scientific and theoretical foundation for justifying the legal regime for the transfer of intellectual rights; and they can be applied for further scientific research and studies on the issues of automated circulation of copyright or patent rights.

The practical significance of the research results is related to the prospects for their application in concluding and executing transactions involving the automated disposition of intellectual property rights, resolving disagreements and disputes that arise between participants in digital contractual relations, including within the framework of judicial proceedings. Furthermore, the conclusions obtained as part of the research can serve as a scientific and methodological basis for building and improving the national information and technological infrastructure that ensures the digital circulation of rights to the results of creative and innovative activities, including on the basis of the digital ruble platform, as well as for developing and introducing the necessary amendments to the current legislation in this area. At the same time, the research results can serve as a source of knowledge when developing educational and practical plans, as well as lecture and seminar sessions on the disciplines “Civil Law,” “Intellectual Property Law,” “Digital Law,” and “Digital Technology Law.”

The validity and reliability of the research results are confirmed by the author's arguments and conclusions, which are based on a comprehensive and systematic analysis of numerous sources and materials that constitute the theoretical, normative, and empirical basis of the research, as well as by the use of a combination of philosophical, general scientific, and special-legal methods of scientific cognition aimed at achieving the goal and fulfilling the objectives of the research through a comprehensive study of its subject matter.

Approbation of the research results. The dissertation research was completed, discussed and recommended for defense at the Department of Civil Law and Procedure of the Faculty of Law named after M. M. Speransky, Institute of Law and National Security, Russian Presidential Academy of National Economy and Public Administration.

The main provisions and conclusions of the dissertation research are reflected in five publications in leading peer-reviewed scientific journals included by the Higher Attestation Commission under the Ministry of Science and Higher Education of the Russian Federation in the list of publications recommended for publishing the main scientific results of a dissertation for the degree of Candidate of Sciences, as well as in numerous presentations at research conferences.

The structure of the work is determined by the goals, objectives and the range of issues under study. The dissertation is structured as follows: an introduction, three chapters comprising eight paragraphs, a conclusion, and a bibliography.