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# On the prospects for an integrated approach to the legal regulation of scientific projects of the “megascience” class

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**Abstract.** Scientific projects of the "megascience" class are large-scale scientific facilities that require the attraction of significant human, material and financial resources. Given these features, they are most often realized by sharing costs between several states interested in implementing projects. The involvement of foreign participants in Russian scientific projects of the "megascience" class leads to the need to comply with the requirements of the legislation of the Russian Federation, which do not take into account the specifics of projects of the "megascience" class, in particular the organization of the stay of foreign scientists, engineers, their labor activities, import and export of scientific equipment, personnel training and others. In this regard, the report considers options for an integrated approach to the legal regulation of scientific projects of the "megascience" class in order to improve their implementation mechanisms and make them more attractive to foreign participation.

## 1. Introduction

Currently, the Russian Federation pays great attention to the development of science. The Strategy of scientific and technological development of the Russian Federation approved by the Decree of the President of the Russian Federation of 01.12.2016 No. 642<sup>1</sup> provides support of creation and development of unique scientific installations of the "megascience" class, large research infrastructures in the territory of the Russian Federation for creation of conditions for carrying out research and development corresponding to the modern principles of the organization of scientific, scientific and technical and innovative activity and the best Russian practices.

An analysis of global practice in the implementation of projects of the "megascience" class shows that they are based on attracting significant human, financial and material resources of several States over a long period of time [1].

In this regard, the implementation of projects of the "megascience" class in the Russian Federation raises a number of practical issues regulated by Russian law:

- organization of the stay of foreign scientists, engineers in the Russian Federation both for short-term scientific events and for the implementation of labor activities for a long period of time.
- organization of import and export from the Russian Federation of scientific equipment used in the implementation of projects of the "megascience" class.

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<sup>1</sup> Collection of legislation of the Russian Federation. 2016. № 49. Article. 6887.



- sharing of rights to the results of intellectual activity between project participants.
- personnel training for projects of the "megascience" class, including through the organization of internships for foreign students and graduate students directly at unique scientific facilities.
- protection of information relating to state secrets and other confidential information subject to protection.

## 2. Legal regulation of large-scale projects in Russia

Many similar issues have arisen in the Russian Federation during major international projects. For example, there is experience in conducting at a fairly high level the following activities:

- Olympic Winter Games and XI 2014 Paralympic Winter Games in Sochi.
- 2017 FIFA Confederations Cup.
- 2018 FIFA World Cup.

To organize their conduct, comprehensive regulatory legal acts have appeared in Russian legislation: Federal Law of 01.12.2007 No. 310-FZ "On the organization and holding of the XXII Olympic Winter Games and XI Paralympic Winter Games 2014 in Sochi, the development of Sochi as a mountain climate resort and amendments to certain legislative acts of the Russian Federation"<sup>2</sup>, Federal Law of 07.06.2013 No. 108-FZ "On the preparation and holding in the Russian Federation of the 2018 FIFA World Cup, the 2017 FIFA Confederations Cup and bearing of Amendments to Certain Legislative Acts of the Russian Federation"<sup>3</sup>.

As part of an integrated approach, the legal status of the event organizers is determined, various benefits and preferences are provided for the organizers of these international events, as well as their commercial partners: exemption from taxes, simplified procedures for crossing the border, labor activities in the Russian Federation without obtaining work permits etc.

Examples of an integrated approach to the issue of legal regulation in the innovation sphere are Federal Law of 28.09.2010 No. 244-FZ "On the Skolkovo Innovation Center"<sup>4</sup> and Federal Law of 29.07.2017 No. 216-FZ "On Innovative Scientific and Technological Centers and on Amendments into separate legislative acts of the Russian Federation"<sup>5</sup>.

These federal laws provide for the following categories of benefits:

- reimbursement of customs payments.
- tax benefits: VAT, income tax, corporate property tax, land tax, state fee (only for participants of the Skolkovo Innovation Center)/
- simplification of procedures for attracting foreign citizens to work.
- simplification of requirements for medical activity.
- simplification of educational requirements.

It is expected that the above support of scientific, small innovative organizations, work taking into account the local concentration of all objects of the necessary infrastructure in a single circuit of the innovative scientific and technological center will have a significant synergistic effect. At the same time, a special decentralized management model is created in the form of a fund and a management company to implement an innovative scientific and technological center.

Moreover, in the cases specified by the Federal Law of 29.07.2017 No. 216- FZ "On Innovative Science and Technology Centers and on Amending Certain Legislative Acts of the Russian Federation", the powers of the management company to carry out the functions of managing the innovation science and technology center in by their nature, they are similar to the powers of state bodies of the constituent entities of the Russian Federation and local authorities, and the powers of federal bodies of state power, bodies of the social insurance fund of the Russian Federation to those

<sup>2</sup> Russian newspaper. 200. № 272.

<sup>3</sup> Collection of legislation of the Russian Federation. 2013. № 23. Article. 2866.

<sup>4</sup> Collection of legislation of the Russian Federation. 2010. № 40. Article. 4970.

<sup>5</sup> Collection of legislation of the Russian Federation. 2017. №. 31 (V. I). Article. 4765.

The territories of the innovative scientific and technological center can be carried out by specially created units [2].

Thus, an analysis of the current legislation of the Russian Federation allows us to identify two main models of complex legal regulation for large projects (activities) affecting various branches of law:

- special federal law for the implementation of a specific project (event).
- federal law establishing common features of legal regulation for repeated application.

### **3. Foreign experience of regulating large-scale scientific infrastructure**

An analysis of the practice of foreign countries shows that the main approaches to the creation and operation of projects of the "megascience" class are defined in roadmaps for the development of large-scale research infrastructure. Similar roadmaps can be found in France, the Netherlands, Australia and other countries.

French national strategy on research infrastructures 2018 Edition identifies 4 categories of research infrastructures: international organizations, large-scale research infrastructure, research infrastructure, and projects. At the same time, criteria are highlighted in it that make it possible to distinguish between a large-scale research infrastructure and a research infrastructure:

- it must be a tool or a device that has unique characteristics identified by the scientific community that makes use of it as required for conducting high-level research activities. The targeted scientific communities can be national, European, or international, according to the case.
- it must have governance that is identified, unified and effective, and strategic and scientific bodies for steering.
- it must be open to any research community that wants to use it, accessible based on peer-reviewed scientific excellence; it must therefore have suitable evaluation bodies.
- it can conduct its own research, and/or provide services to one (or several) communities of users that integrate the stakeholders of the economic sector.
- it must produce a multi-annual budget schedule and submit a formalised budget to the governing bodies.
- it must produce data management plan corresponding to the data opening rules.
- and respecting the international embargo practices of the field involved [3].

A slightly different approach was applied in the National Roadmap for the Large-Scale Science Infrastructure of the Netherlands, adopted in 2016, which establishes the following definition of the concept of "large-scale scientific infrastructure" - the facilities, s, resources and services that a research community uses to conduct research and promote innovation in its field.. Among other things, it concerns important scientific equipment or collections of instruments; knowledge-based resources such as collections of natural specimens, archives and collections of scientific data; e-infrastructure such as (interlinked) data files, and computer systems and communication networks; and any other unique infrastructure that is critically important for achieving excellence in research and innovation. [4].

At the same time, a financial criterion is applied to refer to a large-scale research infrastructure (total investment in the creation, as well as operating costs for 5 years are at least 10 million euros excluding research costs) [4].

Of particular interest is the regulatory model established by the European Organization for Nuclear Research (CERN), which is an international intergovernmental organization established on the basis of the convention establishing the European Organization for Nuclear Research, signed in Paris on July 1, 1953 and entered into force in 1954 [5]. CERN is a large scientific collaboration uniting the participating states, as well as their scientific and financial resources.

Within CERN, a number of independent experiments of ALICE, ATLAS, CMS, LHCb and others are carried out [6]. To implement these experiments, separate scientific collaborations are created, which include various scientific and educational organizations of both the CERN member states and those not included in it.

As Chetverikov A.O. notes, collaborations around detectors of the Large Hadron Collider are de facto independent organizations - each with its own members, its own governing and other bodies. De jure collaborations are not considered an integral part of the organizational mechanism of CERN, i.e. act as satellite organizations, organizations at CERN or, in the words of the former head of the legal department of CERN, J.-M. Dufour, organizations that are “under a legal umbrella” [7].

CERN has another important quality - the “receiving laboratory”. In this capacity, it performs organizational and administrative functions, including normative ones, in relation to the cooperation of experiments and its other members, that is, it is actually the first among equals [7].

However, international scientific cooperation is not without the administrative barriers posed by the mobility of scientists. The notion of a “scientific visa” to legislate for the mobility of researchers has been discussed for decades, but has never been implemented with full efficiency.

Through Horizon 2020, the Framework Programme for Research and Innovation, the European Union has tried to offer multiple opportunities for the transit of researchers between the continent and the rest of the world. The EU has thus recommended, since 2008, that member states incorporate a “scientific visa package” into their national legislations to ensure smooth administrative procedures for visa approval and to facilitate entry into Europe for researchers from third countries [8].

In the United States, it was also noted that visa policy made it much more difficult to exchange ideas and cooperate between American and foreign scientists. For example, the Council of the International Union of Pure and Applied Physics (IUPAP) issued a statement in October 2017 regarding restrictions on travel to the United States by citizens of specific countries. According to IUPAP’s “Policy on Free Circulation of Scientists” these U.S. restrictions could jeopardize IUPAP support for U.S.-based international conferences [9].

Some European scientific laboratories have gone one step farther. For instance, CERN, whose facilities are located in Swiss and French territory, has always helped researchers acquire a residence permit in either country, assuming they are working more than 50 percent of their time at CERN with a contract longer than three months. In fact, the Swiss Federal Department of Foreign Affairs issues a carte de legitimation (“Swiss card”) to CERN researchers and their family members providing immunity from jurisdiction in Switzerland in exercising their functions. And it entitles the holder to live in Switzerland and to travel within the Schengen Area without a visa. Likewise, the French Ministry of Foreign Affairs grants CERN personnel and their family members a French card functioning just like the Swiss equivalent [8].

Thus, the analysis of foreign experience in creating projects of the “megascience” class shows that they can have similar approaches and principles of construction, as well as similar problems. However, the specific implementation of the project of the “megascience” class is largely determined by the legal model and the specifics of the legal regulation of scientific research within the framework of one state and the cooperation of the project participating states.

#### **4. Prospects for special regulation of projects of the “megascience” class in Russia**

It should be noted that in Russia, the passport of the national project “Science” [10] provides for the creation and operation by 2024 of 4 unique scientific facilities of the “megascience” class (the International Center for Neutron Research on the basis of a high-flux reactor PIK, the Complex of superconducting rings on colliding beams of heavy ions NICA, the 4th generation synchrotron radiation source SSRS-4, the Siberian Ring Source of Photons SRSP).

Due to the small number of unique scientific installations of the “megascience” class planned for the near future, the question arises as to the feasibility of comprehensive legal regulation in the form of a “single” federal law, provided that a predetermined list of such installations is provided.

The reasons for the need to draft and adopt a comprehensive law include:

- Federal Law of 23.08.1996 No. 127-Φ3 “On Science and State Science and Technology Policy” does not distinguish the category of research projects of the “megascience” class, it only establishes general regulation of the status of unique research facilities. In general, there is not even a legislative definition of the concept of a unique scientific facility of the “mega-

science” class, although article 11 of the developed draft federal law “On Scientific and Scientific-Technical Activities in the Russian Federation” takes steps to systematize relations in this area, including the term “ a unique scientific setting of an international class ”[11]. In particular, at the moment there is no unified system of normative legal acts: regulating the activities of entities (scientists, scientific organizations, states) in the framework of the implementation of projects of the “megascience” class and the features of their legal status, which determine the legal forms in the framework of international and national scientific cooperations [12].

- it is necessary to create a favorable regime of activities with the aim of attracting foreign participants and creating legal guarantees for the resources they contribute.
- in the future, it is possible to expand the number of unique scientific facilities of the “megascience” class, and therefore there will be a problem with the classification of unique scientific facilities to the “megascience” class. In particular, in 2018, the selection of proposals from interested scientific organizations on the creation of projects of the “megascience” class in Russia and joining such projects implemented abroad was carried out [13].

The argument against the development and adoption of the corresponding comprehensive law is that unique scientific installations of the “megasciences” class are created in scientific organizations that have different legal status, which determines the features of their legal regulation:

- The International Center for Neutron Research on the basis of the PIK high-flow reactor is being created on the basis of the Petersburg Nuclear Physics Institute named by B.P. Konstantinov of National Research Centre “Kurchatov Institute”.
- The Source of fourth-generation synchrotron radiation SSRS-4 on the basis of the National Research Centre “Kurchatov Institute”, Institute for High Energy Physics named by A.A. Logunov of NRC “Kurchatov Institute”.
- The center for collective use “Siberian Ring Source of Photons” (SRSP) on the basis of the Federal Research Center Boreskov Institute of Catalysis of Siberian Branch of the Russian Academy of Sciences.
- The complex of superconducting rings on colliding beams of heavy ions NICA on the basis of the international intergovernmental organization Joint Institute for Nuclear Research, uniting 18 member states, with the corresponding application of international law.

## 5. Conclusion

It must be recognized that the existing mechanisms for legal incentives for scientific projects of the “megasciences” class in the Russian Federation do not fully correspond to those tasks that are provided for by the Strategy for scientific and technological development of the Russian Federation.

Taking into account the complex, multidimensional nature of the implementation of scientific projects of the “megascience” class, it seems quite promising to adopt a separate comprehensive normative legal act aimed at the implementation of projects of “megascience” class on the territory of the Russian Federation with the creation of a system of relevant benefits and preferences for their participants, or as part of a new the developed federal law “On scientific, scientific, technical and innovative activity in the Russian Federation”.

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