Peculiarities of the legal status of scientists working on unique scientific facilities of the "MegaScience" class

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Abstract. The article presents aspects of the legal status of scientists, both internationally and at the Russian level. By the example of the CERN scientific project, the peculiarities of the legal experience of scientists involved in the scientific experiments of CERN are revealed, as well as the corresponding legal regulations. On the basis of the analysis, the expediency of identifying a special legal status of scientists working on unique scientific facilities of the “MegaScience” class is substantiated, which needs additional theoretical understanding.

1. Introduction
It is impossible to conceive of modern science without such scientific projects of the "MegaScience" class as:

- Large Hadron Collider, created by the European Organization for Nuclear Research (CERN);
- European X-ray Free Electron Laser, developed by European XFEL GmbH;
- International Experimental Thermonuclear Reactor, created by the international intergovernmental organization ITER;
- Center for Research of Ions and Antiprotons, created by Facility for Antiproton and Ion Research in Europe GmbH (FAIR GmbH) based on the GSI Helmholtz Centre for Heavy Ion Research;
- accelerator complex NICA, created by the Joint Institute for Nuclear Research;
- and many other well-known global scientific projects.

Unique scientific facilities of the "MegaScience" class are a unique unified system complex of the scientific equipment, created with contributions of resources from different countries and based on international cooperation in order to obtain scientific results containing fundamental knowledge, technology or products of global importance, the achievement of which is impossible using other sets of equipment [1].

In the world, effective practices are being formed to support and develop various forms of cooperation in the field of science, technology, innovation, taking into account the peculiarities of the development of this area in the context of large-scale changes in the international division of labor and global competition.

In accordance with the Concept of international scientific and technical cooperation of the Russian Federation, approved by the decision of the Government of the Russian Federation of February 8, 2019 No. TG-P8-952 [2], global horizontal and network forms of interaction are of great importance for...
modern science, technology and innovation, especially for inter- and multidisciplinary research. One of the manifestations of such relations is the formation of international professional and scientific communities, the growth and strengthening of the role of globally distributed research teams.

The formation of globally distributed research groups is more common when fundamental scientific research is carried out at unique scientific facilities of the "MegaScience" class, where there is a real need to attract leading scientists from different countries.

The formation of scientific collaborations requires the interaction of three key elements: researchers (individual scientists and research teams), infrastructure that ensures the constant functioning of research teams and their projects, and the state as a regulator of relations between scientific organizations and research teams [3].

Accordingly, in connection with the participation of scientists in various scientific projects of the "MegaScience" class, implemented with international participation, theoretical and practical issues of transformation of their legal status arise due to changes in the scope of rights and obligations of these scientists.

2. The basis of the international legal status of scientists
Considering the foundations of the international legal status of scientists, first, it is worth mentioning article 27 of the Universal Declaration of Human Rights, adopted by the UN General Assembly on December 10, 1948 [4], which states that everyone has the right to freely participate in the cultural life of society, to participate in scientific progress and enjoy its benefits, and also has the right to protect their moral and material interests resulting from any scientific works of which a person is the author.

In accordance with the International Covenant on Economic, Social and Cultural Rights, adopted by Resolution 2200A (XXI) of the UN General Assembly of December 16, 1966 [5], the participating States recognize the right of everyone to enjoy the results of scientific progress and their practical application, as well as the use of protection of moral and material interests arising in connection with any scientific works of which a person is the author.

The UNESCO Recommendation on Science and Scientific Researchers of 13 November 2017, which is an updated version of the 1974 Recommendation [6], notes that the word “status” as used in relation to scientific researchers signifies the standing or regard accorded them, as evidenced, first, by the level of appreciation both of the duties and responsibilities inherent in their function and of their competence in performing them, and, secondly, by the rights, working conditions, material assistance and moral support which they enjoy for the accomplishment of their task.

In general, the UNESCO Recommendation on Science and Scientific Researchers carries a positive context with regard to the assessment of the performance of scientific researchers, encouraging states to enhance their status and create an effective environment for their activities. For example, according to paragraph 10 of the Recommendation, each Member State should institute procedures adapted to its needs for ensuring that, in the performance of research and development, scientific researchers respect public accountability while at the same time enjoying the degree of autonomy appropriate to their task and to the advancement of science and technology. It should be fully taken into account that creativity of scientific researchers should be promoted in national policy on the basis of utmost respect for the autonomy and freedom of research indispensable to scientific progress.

However, this UNESCO Recommendation is an example of "soft law", recommending that Member States apply its provisions by taking the necessary legislative or other measures that may be required to apply, within their respective territories, the guidelines and norms set out in the Recommendation.

3. Legal status of scientists in Russia
In Russia, the concept of legal status most often refers to the position of the subject established by the norms of law, the totality of his rights and obligations.

In accordance with Article 44 of the Constitution of the Russian Federation, everyone shall be guaranteed freedom of scientific, technical and other types of creativity. Intellectual property is protected by law.
The basis of the legal status of scientists in the Russian Federation is the Federal Law of August 23, 1996 No. 127-FZ "On Science and State Scientific and Technical Policy", which establishes the rights and obligations of scientists. In particular, a researcher has the following rights:

- recognition as the author of scientific and (or) scientific and technical results and submitting applications for inventions and other results of intellectual activity in accordance with the legislation of the Russian Federation;
- receiving, in accordance with the legislation of the Russian Federation, revenues from the sale of scientific and (or) scientific and technical results, the author of which a person is;
- an objective assessment of his scientific and (or) scientific and technical activities and receiving rewards, incentives and benefits corresponding to his creative contribution;
- carrying out entrepreneurial activities in the field of science and technology not prohibited by the legislation of the Russian Federation;
- submission of applications for participation in scientific discussions, conferences and symposia and other collective discussions;
- participation in a competition for financing scientific research at the expense of the corresponding budget, funds for support of scientific, scientific and technical, innovative activities and other sources not prohibited by the legislation of the Russian Federation;
- submission of applications for participation in international scientific and scientific and technical collaboration (internships, business trips, publication of scientific and (or) scientific and technical results outside the territory of the Russian Federation);
- access to information on scientific and scientific and technical results, if it does not contain information related to state, official or commercial secrets;
- publication of scientific and (or) scientific and technical results in the open press, if they do not contain information related to state, official or commercial secrets;
- a reasonable refusal to participate in scientific research that has a negative impact on humans, society and the environment;
- further vocational education;
- to conclude agreements on joint scientific and (or) scientific and technical activities in accordance with the legislation of the Russian Federation.

 Scientists also have legal obligations:

- to carry out scientific, scientific and technical activities and (or) experimental development without violating human rights and freedoms, without causing harm to their life and health, as well as the environment;
- objectively carry out the expertise of scientific and scientific-technical programs and projects presented to him, scientific and (or) scientific-technical results and experimental developments.

Comparing the provisions of the Federal Law of August 23, 1996 No. 127-FZ "On Science and State Scientific and Technical Policy" and the UNESCO Recommendation on Science and Scientific Researchers dated November 13, 2017, it can be noted that the norms of the Russian law do not fully take into account the changed conditions of the legal and social status of scientists in comparison with modern approaches. In comparison, it should be noted that by their legal status, academic professionals in France, Belgium, Spain and Italy can also act as civil servants in order to ensure social guarantees [7].

Shugurov M.V. notes that the legal status of scientific workers includes not only rights, but also obligations arising from the objective responsibility of science to society, the state, and the individual. Awareness of the responsibility of science, in turn, is a condition and result of the realization and fulfillment by scientific workers of their duties. This is a responsibility not only to science and its interests, but also to society [8].
Taking into account the reform of the Russian Academy of Sciences, it is appropriate to single out three relatively separate groups of researchers:

- scientific workers who work in scientific institutions, funded from budgets;
- researchers working in educational institutions of higher and further vocational education, financed from the budget;
- scientists working in organizations that are not financed from the budget [9].

At the same time, it is advisable to highlight a new facet of the legal status of a scientist, opening up in connection with the implementation of international scientific activities by them on unique scientific facilities of the "MegaScience" class.

4. Peculiarities of the legal status of scientists participating in projects of the "MegaScience" class

It seems appropriate to consider the features of the legal status of scientists on the example of CERN.

A key feature of any megascience-class research project is that the majority of scientists working at unique scientific facilities are not staff members of the organizations created to operate them. Scientists, engineers and other technical specialists are sent by organizations participating in relevant scientific collaborations as their contribution to the development of the collaboration.

The legal status of employees who come to CERN to conduct scientific activities is determined by a group of CERN regulations that are the sources of its internal labor law: Staff Rules and Staff Regulations.

In accordance with these regulations, employees of institutes - members of international scientific collaborations, seconded to CERN, receive the status of "attaché for international collaboration". Their legal relationship with CERN is formalized by the Contract of Association, on the basis of which they enjoy all the rights and bear all the duties of the CERN staff, except those that are provided exclusively for CERN employees working on the basis of an employment contract [10].

The basic rights of scientists recruited to work at CERN are as follows:

- to participate in research conducted by the relevant CERN collaborations;
- to receive information on the activities of CERN collaborations, results, etc.;
- to participate in the governing bodies of CERN collaborations (the right to vote, be elected, etc.);
- to be recognized as the author of the result of intellectual activity, subject to certain conditions;
- to work in safe working conditions.

All scientists visiting CERN, in addition to the Staff Statute and Staff Regulations, are required to comply with the established rules of conduct - Code of Conduct.

It should be noted right away that, according to CERN Director General Rolf Hoyer, the CERN Code of Conduct does not duplicate or expand existing legal rights and obligations, nor is it an exhaustive list of "do's and don'ts". Rather, it is intended to help us understand how to behave, treat others, and expect to be treated in accordance with CERN's values. It is designed to help us understand both our rights and our obligations. In doing so, each of us takes responsibility for upholding CERN's values by ensuring that CERN continues to fulfill its mission in a way that inspires trust and respect, while maintaining a healthy and stimulating environment for all. [11]

The CERN Code of Conduct provides for the following 5 principles: honesty, commitment, professionalism, creativity, diversity. Many of the norms of the Code duplicate the relevant provisions of the fundamental normative legal acts, for example, on the inadmissibility of discrimination on any grounds. However, many responsibilities are of a declarative nature (wishes): to demonstrate honesty and impartiality, flexibility and adaptation to the changing needs of CERN, to maintain a professional environment characterized by good working relationships and an atmosphere of tolerance and mutual
respect, to provide advice and guidance to colleagues where appropriate, and exercise proper supervision and control over tasks that are delegated, etc.

An important duty of every scientist participating in the activities of CERN is the inadmissibility of public discussion and publication of any opinion on CERN issues without obtaining the appropriate consent from the representatives of CERN.

On unique scientific facilities of the "MegaScience" class, scientific results are obtained as a result of the work of hundreds, and often thousands of scientists. This determines the fact that a fairly large number of CERN norms are devoted to the regulation of rights to the results of intellectual activity, and within the framework of each individual CERN collaboration, its own rules have been formed on this issue. As a general rule, all intellectual property rights that arise from or are largely based on the activities of member staff within or on behalf of CERN automatically belong to CERN. The manual defines the conditions under which authors of intellectual property can indicate their authorship in this property.

CERN is characterized by the publication of scientific articles, the authors of which indicate hundreds of scientists - participants in the corresponding collaboration, while most of them do not take real part in writing a scientific article. The current record "hyperauthorship" (5154 authors) was set by an article prepared within the ATLAS Collaboration and CMS Collaboration, where 24 pages out of 33 pages of the article were taken up by the list of authors [12].

The "one-man" publication of the results of scientific experiments is a flagrant violation of the rules established at CERN. On the one hand, it seems that this is a departure from the basic right to recognize a person as the author of the result of intellectual activity. On the other hand, this result of intellectual activity was obtained in the course of joint activities of thousands of scientists and engineers, therefore, these rules are stipulated in advance in legal documents drawn up for employment.

The Russian Federation has been cooperating with CERN for a long time on various issues. The legal basis for cooperation is sealed by the Agreement between the Government of the Russian Federation and the European Organization for Nuclear Research (CERN) on research and technical cooperation in high energy physics and other fields of mutual interest and the Protocol to it dated April 16, 2019.

This Agreement and the Protocol also regulate various issues of scientific cooperation, including the legal status of scientific personnel sent to work at CERN. In particular, Article 3 of the Protocol stipulates that all employees involved in projects must maintain a legal relationship with their referring institution, which, in accordance with the applicable rules and regulations, ensures the remuneration and provision of sufficient financial resources for the maintenance of employees, as well as social insurance coverage. For all employees working at CERN, this coverage includes health and accident insurance in the amount approved by the countries of the European Organization for Nuclear Research (Switzerland and France).

With regard to human resources, CERN considers applications from scientists, engineers and technical staff from Russian scientific organizations and educational institutions of higher education for their subsequent selection and appointment as associate employees of CERN. CERN may, on a case-by-case basis, decide to contribute to the costs of living for the persons indicated in the area where CERN is located in accordance with its staff rules.

In general, the successful experience of CERN's existence shows that despite the fact that many of CERN's responsibilities are of a declarative nature, many norms do not entail legal responsibility ("soft law"), self-regulation at the level of research teams is of great importance. Violation of the ethical standards of a scientist will lead to exclusion from the collaboration, which, in turn, is a significant reputational damage to the scientist's career.

5. Conclusions
Entering into legal relations in the field of “MegaScience” scientists acquire additional rights and obligations that expand their legal status. In particular, they may be subject to the labor rights of employees of the host organization, benefits and privileges applicable to employees of international
intergovernmental organizations, however, restrictions are also imposed, including those affecting their rights to the results of intellectual activity.

These scientists maintain an employment relationship with the scientific or educational organization that sent them to participate in the scientific project of the “MegaScience” class, and also enter into a quasi-labor relationship with the organization implementing this scientific project, performing useful work and research for it. As a general rule, “loan labor” is prohibited in Russia, i.e. work carried out by an employee on the orders of the employer in the interests, under the management and control of an individual or a legal entity that is not the employee's employer (Article 56.1 of the Labor Code of the Russian Federation).

In this regard, the analysis has shown the feasibility of identifying a special legal status of scientists working on unique scientific installations of the “MegaScience” class, which needs additional theoretical understanding.

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