International scientific and technical cooperation as an independent direction of foreign policy: Russian and French experience

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Abstract. The article covers international scientific and technical cooperation as one of the modern diplomacy tools, with considerable emphasis on the French and Russian approach thereto. It is emphasized that both Moscow and Paris regard this issue as one of the directions of its foreign policy. Particular attention is paid to the review of key national regulatory acts of both states in the designated sphere, as well as international treaties concluded by the Russian Federation or France with third States on international scientific and technical cooperation. Specific examples of such joint scientific and technical projects and activities are revealed, with a focus on the features and needs of the regions or parties to the agreements. The conclusion is made on the efficiency of measures and decisions taken by the Russian Federation and France, as well as on the possibility and practicability of borrowing the French experience for the Russian foreign policy and vice versa. The article will be relevant to practicing lawyers, researchers, students and everyone who is interested in international scientific and technical cooperation.

1. Introduction
The process of globalization has a direct impact on accelerating scientific and technological progress, which also entails turning science into a direct productive force. In recent years, the internationalization of development and research, and therefore competition in investment markets for services and knowledge-intensive products, has been observed with increasing frequency. International scientific and technical cooperation is not a new phenomenon, but obviously its value has increased significantly in recent years [1-3], caused by, inter alia, the implementation of mega-science projects [4]. Such interaction may be conducted at different levels: between certain research teams, between universities or research centers from different countries, or between States [5] on a bilateral or multilateral basis. The latter may also be subdivided into the following three categories according to the geographic criterion: regional cooperation, interregional and global. It should be noted that it has become very difficult to carry out major research work within one state, and all basic research needs the support of foreign states [6] and often even private companies [7] due to the complexity, duration and high cost of the work. There are many examples of such research, one of the most relevant to date: the search for vaccines against various diseases, a problem that affected not one or even two countries,
but the whole world. This is the most demonstrative range of research, where there is a real need for Russia's participation in scientific and technical cooperation at the international level.

In this regard, the modern world economy is characterized by the internationalization of the sphere of scientific research. Thus, it is natural that international scientific and technical interaction turns into one of the subjects of state regulation carried out by direct organization or corresponding stimulation of international cooperation in this sector.

Even though one may argue that international agreements on the scientific and technical cooperation are mostly framework and practically do not contain clear legally binding provisions, they still constitute a rather important legal foundation. Both the Russian Federation and France do not stand aside from the process of scientific and technical globalization, regarding international cooperation in this field as an essential part of their foreign policy, with many projects being coordinated, directly or not, by Ministries of Foreign Affairs. And yet, the Russian and French approaches are not the same, which presents a good opportunity to compare these two practices and to draw the relevant conclusions.

1.1. Overview of standing of the Russian Federation in the domain of international scientific and technical cooperation

According to the United Nations Educational, Scientific and Cultural Organization (UNESCO) statistics on the global flow of tertiary-level students, the Russian Federation hosts about 250,000 foreign students, or 4.7% of total number of mobile students, and that classifies Russia at the 6th rank in the world. With some 56,000 students abroad, or 1.1% of total mobile students, Russia holds the 17th position [8].

1.2. Overview of standing of the French Republic in the domain of international scientific and technical cooperation

The aforementioned United Nations Educational, Scientific and Cultural Organization (UNESCO) statistics on the global flow of tertiary-level students shows that France shares the 4th place with Germany in the list of counties that host most about foreign students (with almost 260,000 mobile students, or 4.9% of total number), being the top non-English speaking country in this classification (the “podium” was taken, in descending order, by the US, the UK and Australia). As for the French students abroad, their number is approximately 90,000, or 1.7% of total mobile students, which allows France to take the 6th position in the ranking [8].

2. Russian approach

The development of international scientific and scientific and technical cooperation is regarded as one of the fundamental principles of the state scientific and technical policy of the Russian Federation and public authorities of the Russian Federation shall create the necessary conditions for international scientific and scientific-technical cooperation¹. Such conditions may be laid down in Russian national law and in the international treaties of the Russian Federation.

2.1 National legislation

One of the key Russian national acts in the covered sphere is Federal Law of 23.08.1996 No. 127-FZ "On Science and State Scientific and Technical Policy" that regulates relations between subjects of scientific and (or) scientific and technical activities, government bodies and consumers of scientific and (or) scientific and technical products (works and services), including the provision of state support for innovative activities. According to Article 4 (6) (8) thereof, a researcher (a citizen who has the necessary qualifications and is professionally engaged in scientific and (or) scientific and technical activities) has the right to submit applications for participation in international scientific and scientific

¹ Federal Law of 23.08.1996 No. 127-FZ "On Science and State Scientific and Technical Policy" // CL RF. 1996. № 35. Art. 4137.
and technical cooperation (internships, business trips, publication of scientific and (or) scientific and technical results outside the territory of the Russian Federation). Article 5 (5) of the said Federal law entitles the scientific organization (a legal entity, regardless of the organizational and legal form and form of ownership, a public association of scientific workers carrying out scientific and (or) scientific and technical activities as their main activity) to carry out scientific and scientific and technical cooperation with foreign legal entities and foreign economic activity in accordance with the legislation of the Russian Federation and international treaties of the Russian Federation. Under Article 16 of this law the subjects of scientific and (or) scientific and technical activities have the right to join international scientific and scientific and technical organizations and associations, participate in international scientific and scientific and technical programs and projects, scientific and scientific and technical programs and projects of foreign states, conclude contracts and other agreements with foreign legal entities for work both in the Russian Federation and outside the territory of the Russian Federation in the manner established by the legislation of the Russian Federation. The Russian Federation engages in scientific and scientific and technical cooperation with foreign states on the basis of the relevant international treaties of the Russian Federation, international scientific and scientific and technical programs and projects, and also promotes the expansion of scientific and technical cooperation of scientists and scientific and other organizations. Thus, the Russian legislation envisages three levels of international scientific and technical cooperation: personal (by a researcher), corporate (by a scientific organization) and interstate (by the Russian Federation). This article will focus mostly on the latter form of the international cooperation.

The most of the joint scientific and technological work is part of a broader process of international scientific and technological cooperation, referred to in various sources as international technology transfer, international technology exchange, international exchange of scientific and technological knowledge, etc. Participation of the Russian Federation in international scientific and scientific and technical cooperation is based on international agreements. Among such agreements there are multilateral agreements, "On Establishment of a Common Scientific and Technological Space of the Member States of the Commonwealth of Independent States", the Convention "On Establishment and Status of International Scientific and Research Centers and Scientific Organizations", and others.

The strategy of scientific and technological development of the Russian Federation, approved in December 2016 as one of the directions of the state policy in the field of scientific and technological development, defined the essence of the trend "cooperation and integration" as the formation of such a model of international cooperation, which will increase the efficiency of Russian science through mutually beneficial international cooperation and simultaneously protect the identity of the Russian scientific sphere and state interests in the conditions of internationalization.

The Russian Federation is declared to build friendly relations with each member states of the Commonwealth of Independent States (CIS) on the basis of equality, mutual benefit, respect and consideration of each other's interests. Specifically, for these purposes, the Russian Federation actively contributes to the development of interaction between the CIS Member States on the expanding cooperation in the humanitarian, scientific, educational and cultural spheres. Furthermore, the Russian Federation is interested in building mutually beneficial relations with the United States of America, taking into account the significant potential for scientific and technical and other cooperation.

Russia was expected to enhance international scientific and technical cooperation with the following priority areas: ensuring the involvement of Russian research organizations and companies in international scientific and technical programs of multilateral cooperation, as well as ensuring the membership of Russia and relevant Russian organizations in international scientific organizations, networks and research projects; conclusion of bilateral and multilateral international agreements to stimulate scientific, technical and innovative cooperation; stimulation of the creation of international scientific and technical centers in Russia, as well as corporate research and development centers;

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2 Decree of the President of the Russian Federation of 30.11.2016 No. 640 "On Approval of the Foreign Policy Concept of the Russian Federation" // CL RF. 2016. № 49. Art. 6886.
support of foreign internships for Russian researchers, inviting foreign researchers to Russian organizations, holding international scientific conferences in Russia; elimination of barriers that prevent the intensification of international cooperation, including simplification of the conditions for granting entry visas for foreign researchers, recognition of foreign academic degrees, etc.³.

Decree of the President of the Russian Federation of 08.11.2011 No. 1478 "On the coordinating role of the Ministry of Foreign Affairs of the Russian Federation in the implementation of a single foreign policy line of the Russian Federation" sets forth, inter alia, that the Ministry of the Foreign Affairs of the Russian Federation coordinates the activities of federal executive authorities in the domain of international relations and international cooperation, including the scientific and technical cooperation, and is instructed to exercise general control over the implementation of the international obligations of the Russian Federation.

Ministry of Foreign Affairs of the Russian Federation has as its subordinate Federal Agency for CIS Affairs, Compatriots Living Abroad and International Humanitarian Cooperation (Rossotrudnichestvo) that is a federal executive body in charge of ensuring and developing international relations of the Russian Federation as in the field of international humanitarian cooperation, including, but not limited to scientific and technical cooperation. Outside the Russian Federation, Rossotrudnichestvo, in agreement with the Ministry of Foreign Affairs of the Russian Federation, performs its functions through the representative offices of Rossotrudnichestvo (Russian centers for science and culture, regardless of their precise names) or through their representatives in the diplomatic missions of the Russian Federation, though they do not form part of the staff thereof⁴.

Representative offices and representatives of Rossotrudnichestvo constitute the foreign office of Rossotrudnichestvo, and thus, they may benefit from the relevant privileges and immunities, including the jurisdictional immunities, as provided by a principle of customary international law, enshrined, for instance, in the United Nations Convention on Jurisdictional Immunities of States and Their Property (2005, New York; not yet in force).

2.2 International agreements and regional cooperation

The Russian Federation has concluded more than thirty bilateral intergovernmental agreements on scientific and technical cooperation (e.g., with China, France, Germany, Israel, Switzerland, the UK, the US, etc.). Austria seems to be in unique situation, having concluded with Russia not only intergovernmental (2011), but also interstate agreement (1997), both of them being in force. Such international agreements are usually of framework nature: even though they are legally binding, the rules they contain are more general than precise. For instance, under these agreements the Parties will encourage (emphasis added) cooperation through the exchange of ideas, information, experience, technology, the exchange of scientists and specialists, holding joint seminars, scientific conferences and meetings (Article 1 read in conjunction with Article 5 of the Agreement between the Government of the Russian Federation and the Government of the People's Republic of China on scientific and technical cooperation of 1992; Article 2 of the Agreement between the Government of the Russian Federation and the Government of the United States of America on scientific and technical cooperation of 1993 as amended in 2016; etc.).

Furthermore, bilateral international agreements on scientific and technical cooperation provide for the establishment of the mixed commission for scientific and technical cooperation (regardless of their precise name) that coordinates the efforts of the Parties (e.g., Article 9 of the Agreement between the Government of the Russian Federation and the Government of the Austrian Republic on scientific and technical cooperation of 2011).

³ Order of the Government of the Russian Federation of 08.12.2011 No. 2227-r “On approval of the Strategy for innovative development of the Russian Federation for the period until 2020" // CL RF. 2012. № 1. Art. 216.

⁴ Decree of the President of the Russian Federation of 06.09.2008 No. 1315 "On some issues of public administration in the field of international cooperation" (with the "Regulations on the Federal Agency for Commonwealth of Independent States Affairs, Compatriots Living Abroad and International Humanitarian Cooperation") // CL RF. 2008. № 37. Art. 4181.
The Russian Federation has also concluded almost twenty bilateral intergovernmental agreements on the creation of interstate commission for scientific and technical cooperation (mostly with countries in Africa, the Middle East and Southeast Asia), which may be regarded as a simplified version of the agreements on scientific and technical cooperation.

The Russian state bodies, taking into account the highly integrated scientific and technical potential of the Commonwealth of Independent States and other states - the former republics of the USSR, the existing scientific and technical ties, promote the development of scientific and technical cooperation on the basis of multilateral and bilateral agreements with them. Some former Soviet republics, apart from concluding bilateral agreements with Russia, are party to multilateral treaties on scientific and technical cooperation. Agreement on interstate scientific and technical cooperation (concluded in Minsk in 1991 by Armenia, Belarus, Moldova, Russia, Turkmenistan and Ukraine) is pretty much similar, in its scope and rules, to the bilateral agreements on the said sphere. CIS Agreement on cooperation in the field of interstate exchange of scientific and technical information (signed in Minsk on May 30, 2014) has more narrow subject matter and covers only the issues of processing and transfer of scientific and technical information. It has more signatories (Armenia, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia and Tajikistan), though only three of them (Belarus, Russia and Kazakhstan) have completed their internal procedures necessary for its entry into force.

Another regional cooperation is conducted within Shanghai Cooperation Organization (SCO). The Agreement between the governments of the Member States of the Shanghai Cooperation Organization on scientific and technical cooperation (signed in Bishkek in 2013 by China, Kazakhstan, Kyrgyzstan, Russia, Tajikistan and Uzbekistan), though being the key document on the covered area in the said organization, is yet again rather of framework and general nature, having almost the same provisions as the bilateral agreements.

A very promising association of five major developing economies, BRICS (acronym for Brazil, Russia, India, China and South Africa) is also concerned with the scientific and technical cooperation. Despite the fact that BRICS emerged almost fifteen years ago, it has not been until 2014-2015 that the issue was raised and discussed by the Member States. Memorandum of understanding on cooperation in science, technology and innovation between the governments of the BRICS countries signed March 2015 has a very interesting list of areas of cooperation, including, inter alia, nanotechnology, new energy sources, including the renewable ones, biomedicine and biotechnology. The forms of cooperation are mainly the same as in the bilateral agreements on scientific and technical cooperation. However, it should be noted that whilst the Memorandum regard itself as the main mechanism for implementing cooperation between the BRICS Member States (Article 4), it is not an international treaty, and therefore, it is not legally binding. It does not create rights and obligations under the international law, and its implementation depends solely on the bona fide of the Parties thereto.

Finally, it should be stressed that the representative offices of Rossotrudnichestvo and Russian centers for science and culture abroad are as well established on the basis of the relative international agreements. Nowadays there are almost seventy representative offices of Rossotrudnichestvo and Russian centers for science and culture worldwide, from Finland on the north to South Africa on the south, from Peru on the west, to Japan on the East.

And yet, one may argue that Russia still should develop the so called ‘scientific diplomacy’, which in modern conditions of the internationalization of science is becoming an important tool for solving the problems of scientific and technological development of the country. Three modern tools of scientific diplomacy have been formulated and applied: scientific information support of foreign policy; promotion of international scientific cooperation; use of scientific and technical cooperation to improve relations between countries [9].

3. French approach
Just like the Russian Federation, France considers that international cooperation between researchers is carried out, first of all, on the initiative of the researchers themselves that quite often may have a status of civil servants [10]. The vast majority of cooperation is financed directly by the laboratories.
The spontaneous international collaborations of researchers are supported by their supervisory organizations, which sign formal agreements with their foreign counterparts. The institutions' strategy is reflected in particular by the creation of joint research programs, joint research structures with foreign research organizations, and representative offices.

French authorities (usually the Ministry of Higher Education and Research in collaboration with the Ministry of Foreign and European Affairs) support this cooperation by encouraging associations of French researchers with their foreign colleagues through incentive programs. France is also committed at a significant level in international mechanisms to support scientific research, whether through its participation in very large research instruments, or in international research funding programs.

3.1 National legislation

To implement the corresponding foreign policy, the French authorities have adopted Law No. 2010-873 of July 27, 2010 relating to the external action of the State, under which two legal entities were created to contribute to the international scientific and technical cooperation: Institut Français (“French Institute”) and Campus France. In terms of legal form, they are public institutions of an industrial and commercial nature (établissement public à caractère industriel et commercial – EPIC). EPIC, in its turn, is a legal entity governed by public law, created by another body governed by public law (usually the state or local government) for a special, commercial purpose.

It is not necessary, however, for the industrial and commercial nature of an institution to be enshrined in the law establishing it: the key marker is the nature of the service provided by such an entity. Industrial and commercial nature takes place only when the goals of a public institution coincide or are as similar as possible to the goals of private companies, the source of a significant part of financing is income from the activities of the enterprise, and the methods of organization and management differ from purely administrative [11].

Moreover, in France, a public institution often performs several functions, for example, combining the features of a public institution of an industrial and commercial nature and a public institution of an administrative nature (établissement public à caractère administratif – EPA). The latter is a legal entity governed by public law, controlled by the state or local government, but possessing a certain administrative and financial autonomy in order to provide a service of general interest specified in the constituent documents, which is not of an industrial or commercial nature. And yet, EPIC and EPA are quite often opposed to each other, both in doctrine and in case-law [12].

3.1.1 Institut Français. Institut Français is governed by Chapter III of the aforementioned Law No. 2010-873 of July 27, 2010 relating to the external action of the State and by Decree n° 2010-1695 of December 30, 2010 relating to the French Institute. This institution participates in the implementation of foreign policy, primarily in the field of culture, however, among the main goals and objectives there are several provisions related to scientific and technical cooperation. For example, one of its tasks is to promote and support French ideas, knowledge and scientific culture abroad (Article 9 (II) (5) of the Law on foreign policy of the state and Article 2 (I) (5) of the Decree on the French Institute). Furthermore, the French Institute can organize cultural and scientific events in the framework of the realization of its goals (Article 2 (IV) (1) of the Decree on the French Institute). The overall management of the French Institute is carried out jointly by the Ministry of Europe and Foreign Affairs and the Ministry of Culture of France (Article 9 (I) of the Law on Foreign Policy of the State). It seems surprising that Article 1 of the Decree on the French Institute, in its turn, stipulates that only the Ministry of Europe and Foreign Affairs manages the French Institute.

3.1.2 Campus France. Campus France is more focused on higher education and is therefore much more closely linked to international scientific and technological cooperation. The legal status of this institution is enshrined in Chapter II of the Law on the Foreign Policy of the State and in the Decree on Campus France of December 30, 2011. Its main tasks include, for example, the promotion of the French system of higher and vocational education abroad, the management of scholarships, internships
and other programs for international mobility of students and researchers, assistance to foreign students and researchers, including in matters of residence and visas, support for universities and other institutions of higher education and research, etc. Campus France is managed by the Ministry of Europe and Foreign Affairs and the Ministry of Higher Education, Research and Innovation of France, and unlike the French Institute, there are no divergences on this matter in two constituent legal acts.

3.2 International agreements and regional cooperation

It is on the basis of Campus France that France implements one of the forms of international scientific and technical cooperation with other countries, namely the Hubert Curien partnership programs (Partenariats Hubert Curien, PHC), named after prominent French physicist and European scientist, who served as Director General of the National Center for Scientific Research of France (Center National de la Recherche Scientifique, CNRS), Chairman of the Council of the European Center for Nuclear Research (CERN) and the French Foundation (Fondation de France). He was one of the founders of such structures as the European Science Foundation (ESF), the European Academy of Sciences (Academia Europaea) and the European Space Agency (ESA) and was chairperson thereof. These programs are part of the policy of the Ministry of European and Foreign Affairs to support international scientific and technical exchanges and are carried out with the support of the Ministry of Higher Education, Research and Innovation. Each partnership represents a research project involving two research groups, one being French and the other being foreign. The objective of the partnership is to develop scientific and technological exchange of experience between research laboratories of the two scientific communities, to create conditions for further cooperation and to contribute to its development. The partnerships are designed for both public and private research centers, and they have been established with a large number of states, including Russia (for example, the partnership of scientific and technical cooperation "Kolmogorov", named after famous Russian mathematician, within the Hubert Curien partnership programs).

Furthermore, the French Ministry for Europe and Foreign Affairs, in association with the French National Center for Scientific Research, manages the activities of French research institutes abroad, which usually employ mixed research groups (Unités mixtes des instituts français de recherche à l'étranger, UMI FRE). The network of such institutions (about 30 centers around the world, from Peru to Japan and from Russia to South Africa) can truly be considered as an instrument of scientific and technical diplomacy. Innovative activities and programs of research, dissemination of scientific knowledge and training of these centers are aimed at solving problems and challenges of both the modern world and those related to the history of civilizations and archaeological research. For example, the aim of the Center for Franco-Russian Studies in Moscow is to promote scientific exchange and the development of scientific ties between Russia and France in all areas of the humanitarian and social sciences.

In addition to global projects, the French government provides representation of its leading research centers (for example, the said National Center for Scientific Research of France) in various parts of the world, and also implements regional and bilateral cooperation programs. For example, the French-Indian Center for the Promotion of Advanced Research (Center Franco-Indien pour la Promotion de la Recherche Avancée, CEFIPRA) was established in 1987 with India. For obvious historical reasons, Africa is regarded by France as one of the main directions of international scientific and technical cooperation, and among many projects on this continent, one can single out the regional Franco-Ivorian educational hub or the Franco-South African research institute F'SATI.

As to the bilateral agreements on scientific and technical cooperation, France has concluded more than thirty of them, though they may differ from each other. Ones are of general or framework nature (even the name of the agreement may have such an indication, for instance, Framework agreement for cultural, scientific and technical cooperation between the government of the French Republic and the government of the Kingdom of Cambodia of 1999, etc.), while others are more precise (e.g., specifying the area and (or) the forms of cooperation, the result to be achieved, etc.)[13].
4. Conclusion
Thus, it can be concluded that scientific and technical cooperation is not only a joint development of scientific and technological problems, mutual exchange of scientific achievements, production experience and training of qualified personnel, but also an important component of international relations, which contribute to the formation of a multilayered, multi-channel and multilateral structure of international contacts in general. Both Russia and France regard international scientific and technical cooperation as one of the priorities of their foreign policies, with each of them having concluded more than thirty bilateral agreements and implemented a large number of cooperation projects, even though Moscow and Paris emphasize that such cooperation should be conducted primarily on the level of researchers and scientific laboratories.

And yet, one significant difference in the approaches of Russia and France may be highlighted. While the Russian Federation conducts its policy through the public authorities (mainly the Ministry of Foreign Affairs and its subordinate body Rossotrudnichestvo), France has created two legal entities governed by public law but that essentially are private actors. They do fall under the notion of State within the meaning of the jurisprudence of the Court of Justice of the European Union (see, e.g., Case C-103/88 Fratelli Costanzo, Case C-31/87 Gebroeders Beentjes BV), but are unlikely to be regarded as State under the United Nations Convention on Jurisdictional Immunities of States and Their Property, and therefore, they may not benefit from the relevant privileges and immunities. However, it seems that the French approach is more flexible due to the said difference, which resulted in greater number of partnership programs and projects implemented by the French Republic in the field of international scientific and technical cooperation.

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