

«Review of the S&T Cooperation Agreement between the European Union and Russia»

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Glossary and Acronyms

AC	Associated Country, non-Member and non-candidate countries of the EU contributing to the FP budget
BMBF	Federal Ministry of Education and Research, Germany
CERN	The European Organisation for Nuclear Research
CNRS	French National Centre for Scientific Research
DLR	DLR-International Bureau of BMBF, Germany
ERA	European Research Area
ERC	European Research Council
ESA	European Space Agency
ESFRI	European Strategy Forum on Research Infrastructures
EU	European Union
EUREKA	An intergovernmental initiative with the mission to increase the competitiveness of European industry by supporting close to the market industrial R&D
Europe 2020	The EU's ten-year growth strategy adopted in 2010
FAIR	European Facility for Antiproton and Ion Research, at GSI, Darmstadt, Germany
FASIE	The Russian Foundation for Assistance to Small Innovative Enterprises
FP7	Seventh framework programme of the European Community for research and technological development (2007-2013)
FTP	Federal Targeted Programme, the most important instrument of the Russian government to ensure and provide strategic and focused state support to key areas of state development
GÉANT	Pan-European computer network for research & education
GLORIAD	Global Ring Network for Advanced Applications Development, a high-speed international computer network used to connect scientific organizations
HGF	Helmholtz Gemeinschaft Deutscher Forschungszentren, Germany
Horizon 2020	The EU's framework program for research and innovation for 2014-2020
ICPC	International Cooperation Partner Country, sub-group of Third Countries. Participation in FP usually funded by the FP budget.
INCO	International Cooperation program of FP7
IPR	Intellectual Property Rights
ITER	The International Thermonuclear Experimental Reactor, under construction in southern France adjacent to the CEA Cadarache Research Centre
JINR	The Joint Institute for Nuclear Research, located in Dubna, Moscow region
JRC	Joint Research Centre, the European Commission's in-house science service
Mega Grant	Grants from the Leading Scientists initiative of the Russian Government, which aims to support Russian scientific research by attracting highly qualified scientists into Russian higher education institutions.
NRU	National Research University, Russian state programme for supporting university science
PCA	(EU-Russia) Partnership and Cooperation Agreement
RAS	Russian Academy of Sciences
RFBR	Russian Foundation for Basic Research
RFH	Russian Foundation for Humanities
RMES	Russian Ministry of Education and Science
Roscosmos	Russian Federal Space Agency
RTD	Directorate-General for Research and Innovation of the European Commission
S&T&I	Science, technology and innovation
SFIC	Strategy Forum for International S&T cooperation, established by the EU Competitiveness Council in 2008
TACIS	European Commission's programme (1991-2006), which aimed to promote the transition to a market economy and to reinforce democracy and the rule of law in the partner states in Eastern Europe and Central Asia.
Third countries	Countries other than EU Member States, Candidate Countries (currently recognised as candidates for future EU accession) or Associated Countries to FP
TP	Technology Platform, aimed at stimulating R&D&I through improved cooperation between industry and its stakeholders
XFEL	European X-Ray Free Electron Laser facility, under construction at DESY, Hamburg, Germany

1 Executive Summary

The purpose of this report is to provide a review of EU-Russia cooperation in the field of research, assessing in particular the implementation and impact of the S&T Cooperation Agreement concluded between the European Community and the Russian Federation (“EU-Russia S&T Agreement”). The review was performed by a joint EU-Russia group of independent experts with two members (Päivi Karhunen and Uwe Meyer) appointed by the European Commission, and two members (Pavel Kadochnikov and Vladimir Popov) appointed by the Russian Ministry of Education and Science (RMES). The review was performed between November 21, 2012 and March 31, 2013.

The experts want to thank the European Commission and RMES for the opportunity to conduct this review, and all stakeholders who were interviewed during the review for sharing their views and expertise on different aspects of EU-Russia S&T cooperation. In particular, we want to acknowledge the excellent collaboration with the members of the BILAT-RUS Advanced project consortium, which greatly facilitated our access to data on EU-Russia S&T cooperation.

Findings and Lessons Learnt

The science and technology (S&T) cooperation is one of the most successful and promising areas in EU-Russia relations which provides strong positive signals to the general EU-Russia relationship. Strengthening of S&T and innovation cooperation between the EU and Russia is an essential element of the Strategic Partnership and substantially contributes to the Partnership for Modernization.

The existence of the S&T-Agreement per se is a positive and necessary matter, as it provides a balanced legal basis for the cooperation. The Agreement provides a flexible framework for developing cooperation, including in the area of research-based innovation.

EU-Russia S&T cooperation is very intensive, mostly well balanced and efficient and – so far - successful. Many of the thematic priorities in S&T policies of the EU and Russia are compatible, and each of the partners have high level and potential of S&T knowledge and expertise. In the EU Framework Programs (FP) for Research, Russia has been the most active and successful third country as a non-associated partner, both in terms of the total number of participations and in terms of the total amount of the EU financial contribution received. Similarly, Russia is increasingly providing opportunities for EU scientists to participate in its S&T programs through initiatives based on general openness of its programmes.

However, there still exist a number of administrative obstacles and fundamental barriers, which are hampering still more deepening, more efficient cooperation. One concrete example is the fact that Russia, despite having the competence and can offer its high level science and research facilities, has not yet access to the ESFRI and its Roadmap. In addition, there are technical and administrative barriers such as customs and visa issues, and differences in administrative procedures of funding organizations, which complicate the S&T cooperation in practice.

Recommendations

The EU-Russia S&T Agreement should be prolonged for the next term without any changes to its text and according to the required period of extension (see Article 12b of the Agreement).

The prolongation of the Agreement could be linked with the official start (opening) of the “EU-Russia Year of Science 2014”, on which the Partners have agreed on the occasion of the recent EU-Russia Summit on December 21, 2012 in Brussels.

The S&T cooperation between EU and Russia should be continued and further intensified. The environment and prerequisites (s. 4.2.2) of future S&T cooperation, including better harmonization of funding mechanisms, should enable to perform activities directed towards innovation and practical application of research results.

The S&T programs of the partners should continue supporting the “general openness” principle as a prerequisite for successful cooperation. Both Parties should continue to provide sufficient support for cooperation. In particular, it would be very important to have a flexible mechanism which will allow Russian participants to access Horizon 2020 and other future European research programmes.

A strategic EU-Russia Task Force should be established to support the work of the Joint EU-Russia Committee on cooperation in the field of science, technology and innovation, and to monitor the implementation of its recommendations and decisions.

Although ESFRI is an instrument of the Member States, the incorporation of Russia into the European Strategy Forum on large Research Infrastructures (ESFRI) and on its related Roadmap should be considered as an efficient contribution to build a Common EU-Russia space of research and innovation. The EU, its Member States and Russia are advised to support this process.

Coordinated Calls for projects and programs, which are preferred by a large number of Russian counterparts, should be continued as one instrument of cooperation and improved for future collaboration. This includes the approximation of the administrative procedures of S&T programs and calls, including whenever possible a single process of expert evaluation.

Parties should aim to improve the coordination between EU-Russia cooperation and bilateral cooperation between EU Member States and Russia in order to exploit joint opportunities and synergies for EU-Russia cooperation more efficiently.

The partners should continue to work on the facilitation of visa procedure for scientists and customs procedure regarding transfer of samples and equipment.

The international visibility of Russian science could be raised with the establishment of representations of Russian science institutions in EU Member States where needed. Such representations would facilitate access of Russian scientists to EU programs and vice versa.

2 Introduction to the Agreement and its Implementation

2.1 Rationale and Context of the EU-Russia S&T Agreement

The European Union (EU) and Russia have confirmed their joint commitment to further develop the EU-Russia Strategic Partnership. Both parties are currently working on the New Agreement between EU and Russia, which is to replace the current EU-Russia Partnership and Cooperation Agreement (PCA) of 1997. The New Agreement should reflect the political, economic and social changes that both the EU and Russia have undergone during the nearly twenty years since the conclusion of the PCA in 1997.

Cooperation in science, technology and innovation (S&T&I) is one of the most effective drivers of the partnership. At the St. Petersburg EU-Russia Summit in May 2003, the partners agreed to reinforce their cooperation by creating four “common spaces” in the framework of the PCA and on the basis of common values and shared interests. One of the Common Spaces is on Research and Education, including Cultural Aspects, the others being the Common Economic Space, the Common Space on Freedom, Security and Justice, and the Common Space of External Security. At the Russia-EU summit in Moscow in May 2005 the Roadmaps for the Common Spaces were adopted.

S&T cooperation between the EU and with Russia has an impressive track record. Russia has been the most successful third country participant in the Framework Programmes (FP) of the European Community for research and technological development. In 2008, Russia even expressed its interest in the association to FP7. In February 2011 the association option was however closed because of the FP7 coming to an end in 2013. Instead, the partners agreed to work toward a Strategic Partnership in Research and Innovation. As a concrete step of the partnership, it was agreed at the EU-Russia summit in Brussels in December 2012 to make 2014 the “EU-Russia Year of Science”.

There already is an appropriate institutional framework for EU-Russia S&T cooperation (see Annex 1):

- Agreement on Partnership and Cooperation concluded between the Russian Federation on the one part and the European Communities and their Member States on the other part, signed on 24 June 1994, in force since 1 December 1997
- Partnership for Modernisation initiative between the European Union and Russia, targeted on the development of strategic partnership, launched at the EU-Russia summit in Rostov-on-Don in 2010 and including S&T&I as an important element.
- Agreement on Cooperation in Science and Technology between the Government of the Russian Federation and the European Community, signed on 16 November 2000 and prolonged for two 5-year terms
- Agreements between the Government of the Russian Federation and the European Atomic Energy Community on (1) cooperation in the field of nuclear safety, signed on 3 October 2001 and (2) cooperation in the field of controlled fusion energy research, signed on 3 October 2001.

In addition, the structured dialogue on space between Russian Federal Space Agency (Roscosmos), the European Space Agency (ESA) and the European Commission covers S&T activities in this area. While recognizing the importance of other EU-Russia agreements and initiatives for joint S&T cooperation, this review limits to the activities governed by the

Agreement on Cooperation in Science and Technology between the European Community and the Government of the Russian Federation (hereinafter referred to as EU-Russia S&T Agreement).

2.2 Interests of EU and Russia in Joint S&T Cooperation

Stronger collaboration between EU and Russia in science and technology and its enlargement to innovation is one of the key prerequisites for their economic modernization and improved competitiveness in the globalized world. Close cooperation in S&T&I will strengthen the economies of the EU and Russia, and helps them tackle challenges of globalization more effectively. S&T cooperation provides the opportunity to not only promote the partners' position in the global economy but also to maintain and develop their social and living standards.

Joint S&T cooperation reflects the mutual needs and interests of the parties. The interests of EU and Russia in mutual S&T cooperation are based on the high level of education, scientific capabilities, technical equipment and research facilities possessed by both parties.

The main driver for enhancing S&T cooperation between Russia and the EU is that both sides share the following common interests:

- Enhancing cooperation in innovation, research and development;
- Promoting alignment of technical regulations and standards;
- Promoting a high level of enforcement of intellectual property rights;
- Aiming at sustainable low-carbon economy and energy efficiency, as well as international negotiations on fighting climate change;
- Integration of the scientific and technological potentials of Russia and the EU through both including Russia in the European Research Area (ERA) and fostering EU involvement in corresponding Russian S&T programs.
- Joint implementation of large-scale joint projects, in particular concerning energy efficiency and applied biotechnologies.

Furthermore, the EU and Russia have acknowledged the importance of science and research to economic modernization, growth, and societal well-being. Fostering research and innovation is among the key priorities of Europe 2020 - the EU's ten-year growth strategy adopted in 2010. In addition, both parties recognize that the full utilization of the science and research potential requires integration into the international scientific community. The need to raise the participation levels and an enlarged involvement of Russian research organizations in FP7, increasing the development of research infrastructure and attracting a broader range of international (European) partners to participate in Russian national programs, are among the priorities of the Russian S&T and modernization policies.

On the EU side, the broader institutional context for the S&T cooperation with Russia is provided by the Strategic European Framework for International Science and Technology Cooperation, adopted by the European Commission on September 24, 2008. The strategy sets out the general principles which should foster S&T cooperation of Europe with the rest of the world. It points out the following actions:

- Strengthening the international dimension of ERA. This includes (1) increasing the cooperation with the neighbours of Europe within the FP and (2) developing strategic cooperation with the most important “third countries”.
- Improving of the framework conditions for international S&T cooperation and the promotion of European technologies around the world.
- Improving synergies between international S&T collaboration undertaken on the level of the EU and on bilateral level between EU Member States and non-EU countries.
- Establishing a new strategic forum for international cooperation (SFIC).

Furthermore, the objectives for international cooperation are laid out in the EU Strategy for International Cooperation in Research & Innovation which adopted on September 24, 2012. These include strengthening the EU's excellence and attractiveness in research and innovation and its economic and industrial competitiveness; tackling global societal challenges; and supporting the European Union's external policies. The strategy further underlines the need to reinforce the partnership between the EU and the EU Member States in international cooperation, particularly through SFIC.

On the Russian side, there are two Federal strategies that provide the framework for S&T cooperation with the EU. In 2011 the Russian government adopted the “Strategy for Innovative Development of the Russian Federation until 2020” and in December 2012 the Russian State Program on the “Development of Science and Technology for 2013 – 2020”. The Program includes a special section intended for the development of EU-Russia cooperation on a multilateral basis and also for the promotion of bilateral relations with the European countries. These two documents set trends in the Russian S&T policy and are in good coherence with the “Europe 2020” strategy, as well as with the EU’s next framework program for research and innovation “Horizon 2020”. This demonstrates the convergence of EU and Russian views on S&T&I development. Moreover, both sides are committed to developing their S&T&I cooperation even further, toward an EU-Russia Strategic Partnership in Research and Innovation.

2.3 Scope and Content of the EU-Russia S&T Agreement

The EU-Russia S&T Agreement was concluded in 2000 to encourage, develop and facilitate cooperation between the parties in research and technology development area. The representatives of the EU and Russian S&T communities, who were interviewed for this assessment (listed in Annex 2), were unanimous that the existence of the Agreement is very important, because it provides a legal base and institutional framework for EU-Russia S&T cooperation.

The Agreement consists of 13 articles, which outline the main principles and forms of cooperative activities between the EU and Russia in the field of science and technologies. It declares the following principles (Article 3):

- Mutual benefit
- Timely exchange of information which may affect cooperative activities
- Balanced implementation of economic and social benefits by the EU and the Russian Federation in view of contribution made to cooperative activities by the respective participants and/or Parties.

The areas of cooperation include the following (Article 4):

- Environment and climate research, including Earth exploration;
- Biomedical and health research;
- Agriculture, forestry and fisheries research;
- Industrial and production technologies;
- Materials research and metrology;
- Non-nuclear energy;
- Transportation;
- Information society technologies;
- Social sciences research;
- Science and technology policy;
- Training and mobility of scientists.

Article 5 is devoted to the forms of cooperative activities.

Article 6 declares the Agreement on establishing a Joint Community-Russia Committee on cooperation in the field of science and technology (hereinafter referred to as the Joint S&T Cooperation Committee). The Committee was established in its first session in Moscow in May 2006.

In addition to its main text, the Agreement has two Annexes, which set out the principles for ownership and use of joint research results, including the allocation of intellectual property rights.

The prevailing opinion of the EU and Russian stakeholders interviewed for this assessment was that the text of the Agreement is flexible enough to develop any forms of S&T cooperation, including research-based innovation. However, the areas of cooperation might be updated in the future to reflect major changes in the thematic priorities, which have occurred in both the EU and Russia since the introduction of the Agreement in 2000. New areas for cooperation activities include, for example, green technologies and biotechnologies, which have been recognized as priorities in the “Europe 2020” strategy and in the Complex Programme for Biotechnology Development in the Russian Federation up to 2020, respectively. Moreover, both parties have established thematic technology platforms (TP), which are aimed to consolidate the stakeholders and act as an effective tool for the innovative development and modernization. Therefore, the dialogue between corresponding Russian and European TPs could be promoted in the S&T Agreement as well.

2.4 Role and Impact of the Joint S&T Cooperation Committee

As noted above, Article 6 of the EU-Russia S&T Agreement establishes the Joint Committee to coordinate and facilitate cooperation activities. The tasks and function of the Joint Committee include:

- Overseeing and promoting the activities,
- Making recommendations pursuant to areas of cooperation,
- Proposing new activities,
- Advising the Parties on way to enhance cooperation consistent with the principles of the Agreement,

- Annually providing a report on the status and effectiveness of cooperation undertaken.
- Reviewing the efficient and effect functioning of the Agreement,
- Taking into account the importance of regional aspects of the cooperation.

The Committee meets once a year and extraordinary meetings may be held if mutually agreed. During the recent period (2009-2012) of the Agreement implementation the Committee has performed its function as follows.

The Committee meetings have, **first**, provided a forum for **exchange of information about changes in the parties' S&T policies and procedures**, including **priorities for cooperation**. Since 2009, the EU has informed Russia on relevant cooperation issues such as the new legal framework for facilitating the joint establishment and operation of research infrastructures, and the new strategic framework for international S&T cooperation. In 2012 the Committee discussed the launching of the EU's new framework program for research and innovation "Horizon 2020" in 2014, and its implications for EU-Russian cooperation. Similarly, Russia informed the EU about improvements of the legislative framework for research in Russia, including the Federal law on developing spin-offs from state research organisations, and the establishment of the network of National Research Universities (NRU) with tenders for attracting leading scientists to them.

The exchange of information in the Joint Committee has contributed to the increasing harmonization of the S&T policies, programs and instruments between EU and Russia. Examples of such harmonization include "mirror programs" such as European Research Council (ERC) individual grants on the EU side and the Mega Grants of the Leading Scientists Programme on the Russian side, and the application of the co-funding principle in project funding in EU FP7 and Russian state programs. Such harmonization of rules needs, however, to be understood in the different legal contexts in the EU and Russia.

Second, the Committee has monitored and promoted **EU-Russia cooperation in S&T on policy level**. A roadmap setting out the recent achievements in the EU-Russian S&T cooperation, on-going and planned actions, as well as suggestions for new initiatives until 2012 was agreed following the meeting of the Committee in 2009. In the same year the Compendium on Science and Research Cooperation between the European Union and the Russian Federation was published. Moreover, in 2011 Russia expressed its interest in collaboration in the improvement of its S&T&I indicators, which was welcomed by the EU. In addition, the partners agreed to continue to monitor the progress in the implementation of the EU-Russian Partnership for Modernisation, which was established following the EU-Russia summit of June 2010.

Third, the committee has discussed new potential directions for S&T cooperation. Both sides have expressed their interest in extending the current cooperation to innovation. Potential areas of cooperation could include pre-normative research, in support of international standards, such as standards for electric vehicles. Another area for cooperation is the new forms of financing innovation and exchange of best practices in promoting research-based innovations. Encouraging links between clusters, including those involving small and medium-sized enterprises (SME), and between Russian and European Technology Platforms are other potential opportunities. Regarding thematic areas of cooperation, it was decided to identify areas where the two sides could focus cooperation efforts and budgets, leading to increased scale and impact. The potential candidates are: nanotechnology,

aeronautics, ICT and research infrastructures (covering both ‘traditional’ research infrastructures and scientific data repositories and e-infrastructures).

Fourth, an important mechanism for promoting cooperation, which was initiated at the Committee, is the **establishment of EU-Russia Working Groups (WG) in different fields of S&T and forms of cooperation**. The WG members come from the Directorate General (DG) for Research and Innovation and other relevant ‘research DGs’ on the EU side, and the Ministry of Science and Education and other ministries relevant to the theme on the Russian side. The thematic WGs and their years of establishment are the following:

- Life Sciences and Health Research (2006)
- Biotechnologies and Agro-Food Research (2006), renamed to biotechnology research.
- Nanotechnologies and Materials (2007)
- Civil Aeronautics Research (2007)
- Energy Research (2007), later divided into two subgroups Electricity and Biomass
- Nuclear Energy Research (2007)
- Environmental Research (2009)
- Information and Communication Technology Research (2009)

In addition to the thematic WGs, WGs on mobility and research infrastructures were established in 2010.

In the opinion of the stakeholders interviewed for this report, the WGs have provided a good platform for discussion, sharing best practices and launching activities of mutual interest. One of the best examples of such activities is the organization of Coordinated Calls (CC), which has been a successful form of cooperation. The experiences from CC will be discussed in more detail in Section 3.3 of this report.

According to the stakeholders involved in the WGs, they have been working relatively well, although there have been observed some gaps in communication and subsequent pauses in the organization of meetings. The reason for this has usually been associated with personnel or organizational changes on one side, such as ministries’ restructuring. Furthermore, the cooperation in fields which intersect different units of the European Commission on the EU side and different ministries on the Russian side has been found challenging due to different mandates of organizations. This is the case in fields such as energy, ICT, health or aeronautics. In addition, the S&T cooperation is hampered by weak coordination between S&T and other field policies. Moreover, the interviewees representing the WG maintained that the functionality of the WG is strongly based on supportive interlocutors on both sides. In addition, WG co-chairs need to have the mandate to represent the counterpart organization in question. Otherwise making real progress in cooperation is very challenging, as the experience with the Mobility WG has shown.

Finally, the Committee meetings have also provided a **platform for EU and Russian S&T&I organizations to present their activities** and intentions in international cooperation. These include, for example the interest of the Joint Research Centre (JRC) of the European Commission in closer dialogue with Russian scientists in areas such as nanotechnologies and biotechnologies, and opening new cooperation in a number of other areas. From the Russian side, the Russian Foundation for Assistance to Small Innovative Enterprises (FASIE) presented its international programs with a view to further cooperation with EU funding organizations.

3 Platforms and Instruments for EU-Russia S&T Cooperation

There are currently a number of different platforms and instruments through which the EU and its Member States cooperate with Russia in S&T. These platforms include international institutions and facilities for multinational S&T cooperation, such as

- The International Thermonuclear Experimental Reactor (ITER)
- The European Organisation for Nuclear Research (CERN)
- EUREKA (of which Russia is a full member)
- the Joint Institute for Nuclear Research (JINR)
- the International Space Station
- large-scale research infrastructures on the European Strategy Forum for Large Research Infrastructure (ESFRI) Roadmap
 - European X-Ray Free Electron Laser (XFEL) facility
 - Facility for Antiproton and Ion Research (FAIR)
- GLORIAD (Global Ring Network for Advanced Applications Development)
- GÉANT (European computer network for research & education)

Such multinational initiatives are, however, not governed by the EU-Russia S&T Agreement and are therefore beyond the scope of this assessment. Instead, the focus is on the following forms of cooperation: (1) EU-Russia cooperation within FP7 and (2) EU-Russia cooperation financed by Russian state programs. In addition, the report assesses forms of bilateral cooperation between EU Member States and Russia with a view to mutual consistency and complementarity of activities undertaken by the EU and its Member States.

3.1 EU-Russia S&T Cooperation under FP7

All areas of FP7 are open to the participation of Russian researchers and/or research organisations. Russia has the status of an International Cooperation Partner Country (ICPC) and Russian partners can get funding from the Commission on the same terms and conditions as participants from Member States & Associated Countries (except for EURATOM for which a different set of rules applies). In addition to bottom-up participation of Russian scientists in FP7 project consortia, FP7 has provided targeted financing for EU-Russia cooperation through Coordinated Calls under different themes and policy support and networking projects.

In the current and previous FP, Russia has been the most successful third country non-associated partner, both in terms of the total number of participations and in terms of the total amount of EU financial contribution received (see Annex 4). As of December 2012 the number of proposals with Russian participation submitted to FP7 was 2,124, the number of successful projects 291, the number of participations 463, and the amount of EU contribution 63 million Euros. The number of Russian participations was higher than the number of participations from for example the US or China (382 and 315, respectively).

The most active field of successful participation has been Transport (including Aeronautics), which is clearly dominating with 42 financed projects with Russian participation and 73 Russian participant organizations. The corresponding indicators for the second most active field, Space, are 28 and 47, respectively. (Annex 4) In terms of financial contribution, the EU contribution to Russia has been the largest in the field of Transport (including Aeronautics,

ca. 8 million Euro) with Health, Space and Infrastructures receiving approximately 6.5 million Euro each. The success rate of Russian applicants has in general been equivalent to the overall success rate of FP7 (ca. 20%). The relative success of applications with Russian participation, however, varies among fields. In EURATOM calls the consortia with Russian participation have performed better than the average, whereas lowest success rate has been in the SME theme.

The Russian participations according to organization reflect the structure of the Russian science sector, which is dominated by state research institutions. Nearly half (46%) of the Russian participations are by state research organizations, whereas the corresponding indicator for FP participations is 23% (as of end 2011). Moreover, the share of higher education institutions in participations is somewhat lower in Russia (31%) than in the FP7 in average (38%). The most active participants have been Moscow State University, the Central Aerohydrodynamic Institute (TsAGI), and some institutes of the Russian Academy of Sciences (RAS) such as A.N. Bach Institute of Biochemistry, P.P. Shirshov Institute of Oceanology, and Space Research Institute. In addition, the Higher School of Economics has been most active in INCO projects, and Ioffe Physico-Technical Institute of RAS in Marie-Curie Actions.

When the Russian participation in FP7 is analysed in terms of its geographical dimension, one can first conclude that it is heavily concentrated in Moscow and its surroundings, which can be explained by the concentration of major scientific infrastructures in the capital region. The most frequent locations of participant organizations outside of Moscow and Moscow Region were St. Petersburg and locations of the Siberian Branch of the RAS (particularly Novosibirsk).

Second, the main collaborative partners of Russian organizations in FP7 (both in terms of project coordinators and consortium partners) are the largest participant countries of the FP7 Germany, United Kingdom, France and Italy. Moreover, the frequency of Germany as the coordinator's country (61 projects) is nearly twice as large as for United Kingdom (35), France (33) or Italy (30). In addition, Russia's collaboration with some partner countries demonstrates a strong geographic dimension. These include, for example, projects coordinated by Norwegian or Finnish organizations with participants from Northwest Russia, which focus on specific problems of the Northern Regions.

Russia –EU projects under **FP7 Specific Programme “Capacities” (Horizontal actions and measures in support of international cooperation)** have also served as useful platforms for promoting S&T&I policy dialogue between Europe and Russia and for the exchange of experience and good practices. These include recent and on-going FP7 projects BILAT-RUS, BILAT-RUS.Advanced, ACCESS-RU, ERA-Net.RUS and IncoNet-EECA projects, as well as previous FP5, FP6 and TACIS science policy support and networking projects. These projects are important examples of successful cooperation between the EU Member State organisations and their Russian counterparts in support of scientific cooperation and the development of joint research activities. As part of these projects, a wealth of detailed information has been produced about the EU and its Member States' policies, programs, agreements and instruments in support of science and innovation cooperation with Russia, about Russian S&T&I system, and about the possibilities for European researchers and research organisations to participate in Russian funding programs. In addition, the projects have produced or are currently producing foresight scenarios for the development of the EU-Russian S&T&I relationship.

One of the outcomes of the work in Thematic Working Groups, established by the Joint S&T Coordination Committee, has been the establishment of a number of **Coordinated Calls** (Annex 4). These are parallel calls for research projects, published by the EU and Russia with common research content and a requirement that research teams on both sides wishing to collaborate, establish links and submit separate but complementary proposals to the EU and to the Russian funding agency involved. Coordinated Calls represent one of the key mechanisms for ensuring an equals-based partnership with co-financing and shared responsibilities.

Another step towards integrating Russia into the European Research Area (ERA) was its involvement in the ERA.Net mechanisms. This included the launching of the first joint pilot calls (ERA-IB, EuroTransBio) with FASIE as the co-funding partner from the Russian side. Moreover, the ERA-Net.RUS project was used as a platform for launching pilot calls in collaborative innovation and S&T projects. Russian financing was provided by the Russian Foundation for Basic Research (RFBR) and FASIE.

Valuable experience has thus been gained about the possibilities of Russian funding agencies to participate in this type of European schemes which involve the co-funding and implementation of joint research initiatives at the program level. So far EU Member States and Russia have worked together in several thematic ERA-Nets, namely BONUS (later transformed into the Bonus 185 initiative, without Russian participation), ERASysBio, EUROPOLAR, ERA-IB and EuroTransBio. This demonstrates the overall trend of moving towards a partnership between equals, based on sharing funds and responsibilities and contribution to the success of ERA by improving the coherence and Europe-wide coordination of national and international S&T programs.

The FP7 **Marie Curie Actions (MCA)** play an important role in reinforcing EU-Russia collaborations by supporting the mobility of top quality researchers and by strengthening collaborations of European and Russian research institutes. Balanced scientific and academic mobility between the EU and Russia as well as exchange of laboratory staff between partner institutions is a key factor for successful S&T collaboration.

Finally, the next FP, **Horizon 2020**, will continue to be open to international partners, including Russia. In terms of conditions for participation, Russia will however be in the same category of countries as, for instance, the US or Japan. In particular, there will be no automatic funding by the EU of Russian participants. The association of Russia to Horizon 2020 is also not foreseen, as Russia does not meet the formal criteria stipulated in the official proposal for Horizon 2020. In order to maintain its top position amongst international partners in the FP, Russia therefore needs to have a flexible mechanism which will allow it to fund Russian participants in Horizon 2020 and other European research programmes.

3.2 Russian Programs and Instruments for EU-Russia S&T Cooperation

While the EU's Framework Programmes for Research are in general open to Russia, the EU-Russia S&T Agreement foresees Russia to open its national programmes to EU researchers. However, the access of European organisations and researchers to Russian research and innovation programmes is relatively complicated. According to a number of Russian stakeholders interviewed for this assessment, the access of European organisations to Russian programmes is possible in theory, but in practice there are no concrete implementation

mechanisms. A major obstacle is, however, the lack of knowledge of European researchers about the Russian programmes.

Federal Targeted Programmes (FTP) constitute the most important instrument to ensure and provide strategic and focused state support to key areas of state development, including in the field of S&T&I. Each FTP is set up by a Government Regulation and has clear identification of goals, budget, types of activities and target audiences.

In the list of FTPs, the following programmes have relevance to S&T (the list is non-exhaustive):

- Global navigation system 2012-2020
- Development of civil aircraft engineering in 2002-2010 and for the period to 2015
- Federal Space Program 2006-2015
- Development of education 2011-2015
- Russian space-vehicle launching sites development 2006-2015
- Research and development in Priority Fields of the S&T Complex of Russia 2007 – 2013 (to be extended to 2020)
- Development of nuclear energy production complex to 2015
- Research and Pedagogical Personnel for Innovative Russia 2009-2013 (to be extended to 2020)

Furthermore, the **Leading Scientists** initiative of the Russian Government under decree N220 –**Mega Grants** - aims to support Russian scientific research by attracting highly qualified scientific and, in particular, foreign leading scientists into Russian institutions of higher education. The distinctive feature of this initiative is that financing for the leading scientists is provided solely from the Russian side, which considerably expands the possibilities of foreign researchers. For the implementation of this project the Russian government allocated 3 billion roubles (€75 million) in 2010, 5 billion in 2011 (€125 million), and 4 billion (€100 million) in 2012. About 11 billion roubles (€270 million) will be allocated in the next four years, 2013-2016, including 4 billion (€100 million) in 2013. Funding for the programme does not come from the current educational budget, but from new additional Federal appropriations. Funds are available through a competitive grant process. Since 2012 not only institutions of higher education but also scientific centres have been allowed to take part in the call and invite leading scientists. Further grant prolongation for 2 more years is viable on the competitive base. The “leading scientists” initiative is a good example of EU-Russia collaboration based only on Russian state funding and illustrates Russian readiness for reciprocity.

Moreover in the framework of the on-going “leading scientists” initiative there are several “hot lines” where foreign applicants can receive all useful information in English language. This is designed to promote Russian R&D programs and overcome the lack of information. Nevertheless Russian and European stakeholders should join efforts to develop informational channels on access opportunities to the Russian FTP. Two parameters should be considered: a) relevance of the information presented to the EU researchers; b) adaptation of the information to the targeted EU audience.

In 2009 the **Skolkovo project** was launched in Russia. The project’s aim is to create a special environment that will concentrate intellectual resources and encourage free creativity and scientific inquiry. The Skolkovo project is open for foreign companies. Moreover, participation of foreign experts is one of the conditions for a project application to be granted

a status of Skolkovo Innovation Center Participant by the Skolkovo Fund expert panel. This naturally pushes Russian organisations to search for European partners. Without such a motivation mechanism, there would be no or little interest for joint projects with foreign partners. A tender for Russian and foreign companies is now open and will be held on a permanent basis.

Another tool for possible further enhancement of cooperation is the **Russian Technology Platforms** (TP) aimed to consolidate stakeholders in the corresponding thematic areas. On April 1, 2011 the Russian government approved a list of 27 priority technology platforms. The implementation of these platforms involves a partnership of government, business and science in the development of advanced technologies and turning them in production. Due to the fact that Russian TPs are on the early stage of formation, nowadays the possibilities of dialogue between Russian and the European TPs are underused but this could bring new possibilities for mutually beneficial collaboration in priority S&T areas.

As shown above, there is a substantial variety of Russian innovation and research programmes open for participation by EU-based organizations. However, the programmes and tenders, which seem to be most open and most **suitable for European researchers**, include the following:

- Bilateral and multilateral calls involving Russian funding organizations and their counterparts from the EU or its Member States, since they by definition aim to reinforce cooperation between Russian organizations and international partners.
- All programmes addressed to the further development of Russian universities (Federal Universities Programme, National Research Universities (NRU) Programme). These programmes aim at strengthening the internationalization of Russian higher education and at raising the level of research conducted at universities to high international standards. Consequently, these programmes are more flexible and open for international participation.
- Programmes which aim at attracting top class scientists to Russian universities. The category “top scientists” explicitly includes not only Russian, but also foreign researchers

European researchers are encouraged to participate in Russian projects in different ways. Even if this participation is often not funded by the Russian side, it provides important benefits:

- Free access to facilities and research equipment (e.g. place for observation and experimentation, databases related to the areas of joint activity);
- Exchange of experiences (as well visits and exchanges of scientists, engineers and other professionals to participate in seminars, symposia and conferences related to the areas covered by the project);
- Possibility to access to other activities that may be offered by the Russian party in accordance with new programs or policies;
- A financially sustainable Russian partner, which does not need to be financed by the European partner

Scientific exchange is a complicated process, but Russia attempts to simplify it and make all the procedures more acceptable and clear. There are already several improvements in the legislation in this regard, which have facilitated the following procedures:

- obtaining a scientific visa;
- simplifying administrative procedures;
- concluding agreements;
- providing social security;
- developing scholarships.
-

Moreover, the availability of information on the funding opportunities available to foreign scientists has improved. Under the Leading Scientists initiative there are several “hot lines” where scientists can receive useful information in English language. There are a number of research centres and institutions in the Russian Federation with unique equipment and scientific potential, which are situated in the distant provinces. Now the access process for the foreign researchers to such institutions has become easier. Nevertheless, scientific mobility between EU and Russia remains to be dominated by Russian scientists going to the EU. In addition to the “hot lines”, the visibility of Russian funding opportunities could be improved by establishing representations of Russian science institutions in EU Member States.

3.3 EU-Russia Coordinated Calls

Coordinated Calls are an instrument of the FP7 which can be used for cooperation with funding bodies from partner countries. According to this scheme each partner provides financing for the projects financed under the call, usually each of the partners funding its own scientists. By 2011, the EU had conducted more coordinated calls with Russia under FP7 than with any other international partner (eight in total, see Annex 4).

The Russian financing for these calls has been provided by the RMES and in several cases by the Russian Ministry of Trade and Industry and the Russian Ministry of Communication, and the call management has been undertaken by the thematic WGs under the Joint S&T Committee. The stakeholders interviewed for this report shared the opinion that, overall, the experience of coordinated calls has been very positive and the continuity of Russian membership in the evaluation panels of the EU and Russian calls was seen as an example of good practice.

The types of collaborative calls implemented within the WG have varied in terms of intensity of cooperation. The most integrated (and time/resource-consuming) model was applied by the Energy WG, which organized coordinated calls with the same evaluators evaluating proposals on both sides. In other coordinated calls (ICT, aeronautics) the evaluations were made independently of each other and the “mirror” projects signed cooperation agreements. In the lightest forms of cooperation (Health; Food, Agro & Biotech), there has not been any administrative coordination between the projects. The coordination has only been on the level of call topics and timing.

At the same time, the European Commission officials involved in the organization of the calls pointed out that the preparation and implementation of coordinated calls was complicated due to the non-synchronised timeframes for submission and review of proposals on the two sides, as well as differences in the procedures applied. One of the main challenges was the legislative requirement for call for proposals in the EU and call for tenders in Russia. Moreover, one common evaluation has not been possible for legal reasons, and the different evaluation procedures have brought along practical problems. For example, applying different evaluation criteria, where there is no flexibility on either side, have resulted in

ranking lists (even made by the same team of experts) different from each other. In addition, due to different legal frameworks a mirror project may get selected by one of the parties, but rated as ineligible by the other. Nevertheless, these challenges have been solved through negotiation and the implementation of the calls has proven easier with experience.

3.4 Bilateral S&T Cooperation between EU Member States and Russia

According to the Russian Ministry of Science and Education, Russia has in force S& T agreements with 15 of the 27 EU Member States (Annex 5). In addition, six EU Member States have also other bilateral agreements with Russia, which address science or technology issues. The deepest commitment to bilateral S&T cooperation with Russia is demonstrated by Germany and France, which have made a joint declaration with Russia on strategic partnership in education, science and innovations. Moreover, a number of EU Member States have concluded bilateral modernization partnerships with Russia. At the same time, the measures of EU Member States to intensify innovation cooperation with Russia are not always accompanied with investments in research cooperation.

Agreements have been established similarly on the level of research foundations, such as RFBR, Russian Foundation for Humanities (RFH) and their European counterparts. On the level of research organizations, especially the RAS has a dense network of cooperation agreements with Science Academies in the EU countries and FP7 Associated Countries. Not all these agreements have, however, resulted in substantial cooperation in the form of joint funding programs. The most comprehensive and long lasting bilateral cooperation programs have been established in fundamental research (RAS, RFBR, RFH), and collaboration between funding bodies in applied research and innovation (such as FASIE from the Russian side) has started to develop successfully during the recent years.

There is no comprehensive information available about the budgetary contributions of Member States to bilateral S&T cooperation with Russia. However, based on a survey conducted in 2009 in the BILAT-RUS Project, the frontrunners in budget size are the large EU countries Germany (Helmholtz Association, German Research Foundation, International Bureau of BMBF, the Federal Ministry of Education and Research of Germany) and France (French National Centre for Scientific Research CNRS). Moreover, Helmholtz Association and CNRS have invested in cooperation with Russia also with own representations in Moscow. In addition, there are smaller EU countries with substantial budgetary contributions to S&T cooperation with Russia, including Austria (Austrian Science Fund) and Finland (Academy of Finland). On the level of Science Academies, Poland is an example of intensive bilateral cooperation with Russia.

The activities supported on the bilateral level are various. The most common instrument is support for mobility, which is followed by funding for research projects, implementation of joint funding programs and dissemination of results. According to the EU Member States' and Russian stakeholders interviewed for this assessment, the bilateral programs have an important role in providing funding complementary for the EU programs. In addition, bilateral cooperation serves the important function of a "springboard" to projects funded by the EU. For example, contacts established through bilateral cooperation can be exploited when building FP7 consortia, and in some cases (e.g. the Netherlands) bilateral schemes have provide even funding for the preparation of FP7 applications. In addition, as bilateral projects

are usually of smaller scale and have less complicated application procedures, they are accessible for those scientists as well who have little experience in international projects.

Furthermore, more institutionalized and mature cooperation instruments, such as access to R&D infrastructure and joint laboratories, are far less common in bilateral cooperation. Examples of such initiatives are XFEL and FAIR, which are currently under construction in Germany. Both projects (each of them more than €1 Billion cost) have a European dimension and participants, and both are already located on the ESFRI Roadmap. Germany, as the largest contributor, is strongly supported by Russia through funds and scientific personal and through the development and delivery of innovative technical equipment. Russia will contribute with about 25% of the cost for XFEL and about 18% of those for FAIR. It is the first time that Russia is investing such amounts of financing in research facilities which are not located on its own territory. These projects are good examples of the role of long-lasting and intensive bilateral relations as contributor to multilateral initiatives. Taking reference to its strong own involvement in these two projects, Russia is now expecting a fruitful collaboration and substantial contribution to the realization of its research infrastructure projects from its partners in the EU.

Thematic priorities of bilateral S&T cooperation with Russia cover a broad spectrum of science. A majority of Member State organizations have a broad thematic approach, but some of them have defined specific priorities. The most frequently cited thematic priorities are nanotechnology/materials, energy, environment/climate change, socio-economic sciences and humanities, ICT and biotechnology.

To sum up, the bilateral S&T cooperation patterns between EU Member States and Russia reflect relatively well EU-Russia level cooperation in terms of thematic priorities. On the other hand, the bilateral programs can be seen as complementary to EU level instruments in the sense that they provide additional opportunities for mobility and scientific contacts. Similarly, the EU level instruments provide opportunities for financing institutionalized cooperation, such as integration of research infrastructures which is often beyond the scope of bilateral cooperation.

Efforts have been taken to further improve the coherence between the EU-level activities and the bilateral activities of its Member States which are undertaken with Russia in the area of S&T. These include, for example producing comprehensive overviews of existing agreements and programmes on EU and Member States level, produced jointly by the EU Delegation and EU Member States' Embassies in Moscow. An important new step in the coordination of EU and its Member States' activities was taken with the FP7 coordination and support actions involving Russia. These include the ERA-Net.RUS, BILAT-RUS, ACCESS-RU and IncoNet.EECA projects, which are being implemented by Member States and/or some of their leading research and research-funding organisations. Such initiatives have provided platforms for extending bilateral relations on a multilateral level, and for identifying themes of common interest.

3.5 Obstacles in and Future Opportunities for Cooperation

The stakeholders interviewed for this report were unanimous that the EU-Russian S&T cooperation is successful. Nevertheless, there were certain issues that were repeatedly raised as obstacles for cooperation (see also Annex 6). Some of them were related to the **wider context on cooperation**, which is beyond the immediate impact of S&T policy-makers. These include, first, cumbersome visa procedures (particularly for Russians obtaining visa for the EU), ambiguous regulation of intellectual property rights (IPR), and problems caused by customs procedures when transferring samples and scientific equipment between the EU and Russia. Second, there were examples where S&T cooperation had been influenced by policies that had no direct relation to it. One example is the more complex visa registration procedure that staff members of EU Member States scientific organisations' representations in Russia faced as a consequence of changes in the Russian legislation on foreign-funded non-governmental organizations. In addition, due to financial regulations the transfer of funds between the EU and Russia was perceived as rather complicated and sometimes costly. Therefore, many interviewees referred to the principle of each partner financing its own scientists as the most feasible form of future cooperation.

One concern directly related to the **implementation of S&T policy**, including financing for EU-Russia S&T cooperation, was the question of sustainability of results of collaborative initiatives. Representatives of INCO projects interviewed for this review particularly called for attention to this issue. These projects have developed, for example, web-based platforms for improving the exchange of information and networking among EU and Russian scientists, the future maintenance of which would require a sustainable financial basis.

On the level of **scientific organizations and individual scientists**, the most often cited obstacles for cooperation include the lack of information on funding opportunities and potential partners in Russia or the EU. This is in part due to language and cultural barriers, i.e. inaccessibility of Russian-language information on Russian programs and their procedures, and lack of English skills and unfamiliarity with requirements of EU programs among the Russian scientific community. In addition, the internal bureaucracy associated with organising research visits in some cases decreases the interest in international mobility. As mentioned by a number of interviewees, the role of Russian scientists residing in the EU is important. They often act as information conduits and "linking pins" between EU scientists and their Russian counterparts.

One option to alleviate administrative problems, which were identified during the review process, would be to establish a permanent facilitating structure in Russia. Such facilitating body established through and under the supervision of RMES, could perform similar tasks as corresponding entities in some EU Member States (France, Germany). This facilitator would assist in the preparation and coordination of projects and programmes, implemented with the EU or its Member States. It would take over administrative and technical management tasks from RMES during their implementation from RMES, while any decision-making about programme content and project funding would be kept under the Ministry's control.

Finally, the question of 'looking beyond' the bilateral EU-Russia relationship in S&T cooperation was addressed in general as a component in the international activities of EU and Russia research and research funding organizations. Therefore, the attractiveness of Russia and the EU as S&T partners is constantly benchmarked against other countries.

4 Major Findings and Recommendations for Improvements

4.1 Major Findings and Lessons Learnt

- The science and technology (S&T) cooperation is one of the **most successful and promising areas** in EU-Russia relations. Therefore, it gives strong **positive signals** to the general EU-Russia relationship as well. The existence of the **S&T Agreement** per se is a positive and necessary matter, as it provides a balanced **legal basis** for the cooperation. The text of the current S&T Agreement provides a **flexible framework** for developing cooperation, including the area of **research-based innovation**.
- Looking from a wider perspective, the EU-Russia S&T cooperation is very intensive, mostly well balanced and efficient and – so far - successful. Strengthening of the S&T and innovation cooperation between the EU and Russia is an essential element of the Strategic Partnership and will contribute sustainably to the Partnership for Modernization Initiative.
- In the EU Framework Programmes (FP) for Research, Russia has been the most active and successful third country as a non-associated partner, both in terms of the total number of participations and in terms of the total amount of the EU financial contribution received. The principle of openness to any entity of the EU Framework Programmes for Research is one of the main reasons for successful EU-Russia cooperation in this regard.
- Most of the thematic priorities in S&T policies of the EU and Russia are compatible, and the partners have high level of S&T knowledge and expertise complementary to each other.
- Targeted and committed collaboration in S&T and education between the EU, its Member States and Russia have great potential to contribute to innovations and thereby boost the development of modernization of the economy and society.
- Prospects for intensifying and extending this collaboration are promising, because of existing strong intellectual capacities, a long tradition of cooperation in S&T, unique research facilities, broad overlapping strategic priorities, coherent approach and common view on major challenges in S&T. Appropriate prerequisites are given and mostly provided by both Partners.
- The INCO projects (BILAT-RUS, ERA-Nets, ACCESS-RU and thematic projects) have helped to promote direct relations and understanding between the Partners. Such projects have provided a platform for testing and developing new mechanisms of cooperation, which can be further utilized and improved.
- The implemented coordinated calls (CC) have shown that ambitious and long-term EU-Russia initiatives, including multi-disciplinary initiatives, can be successfully implemented.
- There is active bilateral cooperation undertaken between several of the EU Member States and Russia, which is complementary to EU-Russia level cooperation, and in some areas even beyond the joint EU-Russia activities.

- However, there still exist a number of administrative obstacles and barriers, which in some cases have hindered efficient cooperation. In the future, they may prevent a faster enlargement and further improvement of EU-Russia S&T cooperation. Examples for the most frequently raised issues are as follows:
 - There is a need for further harmonization of the funding principles and evaluation procedures of the EU and Russian program executors; although Russia has already developed and incorporated some improvements and innovations on these issues during its participation in FP7 funded initiatives.
 - The European Strategy Forum of large Research Infrastructures (ESFRI) is still not accessible for facilities from Russia. This impedes the creation of a real, Europe-wide, common space of science, and may limit the value and impact of the current ESFRI-Roadmap.
 - The legislative framework for cooperation, including questions of IPR and patent regulation issues needs further approximation.
 - The scientific and academic mobility between EU and Russia is unbalanced, partly due to lack of knowledge among the EU scientists about research opportunities in Russia.
 - Some of the joint projects need better balanced contribution from the funding organizations of the Partners.
 - Language barriers and unfamiliarity of EU scientists with the application procedures in Russia, and vice versa, hamper the full exploitation of cooperation opportunities.
 - Customs regulations & procedures on both the EU and the Russian side hamper the effective exchange of joint project results and project items (e.g. transfer of samples and product specimens).
 - Some EU Member States maintain bureaucratic, delayed and even restrictive procedures for provision of visa to Russian scientists in charge for the implementation of joint projects.

4.2 Recommendations

4.2.1 Recommendations regarding Strategic and Political Relevance and Impact

Having investigated the state-of-affairs of EU-Russia S&T cooperation, the following are recommended:

- **The Agreement on Cooperation in Science and Technology between the European Community and the Government of the Russian Federation should be prolonged** for the next term **without any changes to its text** and according to the required period of extension (see Article 12b of the Agreement). The required formal procedures for this prolongation on both sides should be undertaken without delay.
- The prolongation of the Agreement could be linked with the official start (opening) of the “EU-Russia Year of Science 2014”, on which the Partners have agreed on the occasion of the recent EU-Russia Summit on December 21, 2012 in Brussels.
- The forthcoming EU-Russia Year of Science 2014 can be used as an opportunity to move the EU-Russia cooperation to the next level. This includes promoting cooperation within the Framework Program for Research and between the EU Member States and Russia,

improving framework conditions for cooperation, increasing visibility for important collaborations, and providing political signals.

- The S&T programs of the partners should continue supporting the “general openness” principle, because it is a prerequisite for successful cooperation. Unambiguous information on “general openness” should be linked with announcing and implementation of the programs, to foster the realization of this principle more effectively in practice.
- Both Parties should continue to provide sufficient funding for their science and research institutions to cooperate under programmes provided by the parties. In particular, in order to maintain its top position amongst international partners in the FP, it would be very important for Russia to have a flexible mechanism which will allow it to fund Russian participants in Horizon 2020 and other European research programmes.
- **An EU-Russia S&T Task Force should be established.** This Task Force will act under the auspices of the Joint EU-Russia Committee on cooperation in the field of science, technology and innovation (hereinafter called the “Joint Committee”). The Task Force is suggested to operate based on Terms of References (ToR) to be adopted by the Joint Committee. The ToR may include the following tasks:
 - a) To support the work of the “Joint Committee” and to follow and to track the implementation of its recommendations and decisions.
 - b) To oversee and coordinate the thematic Working Groups, including providing recommendations of discontinuing some of them and/or establishing new ones, as well as tracking and ensuring information exchange between them.
 - c) To elaborate strategic views of prospective ways of EU-Russia S&T cooperation development.
 - d) To suggest new or improved procedures and instruments in the Agreement’s implementation processes.
 - e) To consider, discuss and develop appropriate amendments for a draft of a new EU-Russia S&T Agreement, which may follow/substitute the current (extended) one beyond 2019. Future areas of cooperation may include for example biotechnology and the dialogue between Russian and European thematic technology platforms
 - f) Further development of the Roadmap for EU-Russia S&T&I Cooperation from 2014, including the elaboration of the 2-year term’s agenda, and according to the guidelines provided by the Joint S&T Cooperation Committee.
- **The S&T cooperation between EU, its Member States and Russia should be continued and further intensified.** The environment and prerequisites (s. 4.2.2) of future S&T cooperation, including better harmonization of funding mechanisms, should enable to perform activities directed towards innovation and practical application of research results.
- Although ESFRI is an instrument of the Member States, the **incorporation of Russia into ESFRI and on its related Roadmap** should be considered as an efficient contribution to build a Common EU-Russia Space of Research and Innovation. The EU and Russia are advised to support this process by promoting synergies between ESFRI Roadmap and existing unique large research facilities in Russia, as well as the **Russian Mega Science Projects** under consideration and/or construction.

4.2.2 Recommendations regarding Organizational and Technical Improvements

Topics for improvement of technical and organizational procedures that both sides should work on:

- **Fostering academic and scientific mobility between the EU and Russia** by dismantling barriers or obstacles, including visa regime facilitations and clarification of taxation procedures. For example, scientists participating in EU-Russia collaborative projects might be automatically granted multiple-entry visas for the duration of the project.
- **Harmonization of the administrative procedures of S&T programmes and calls**, including the processes of expert evaluation (common acceptance of projects' selection procedures and criteria).
- It is recommended to consider establishing in Russia a **facilitating body**, having tasks similar to corresponding entities in some EU Member States (France, Germany), which would be tasked through RMES to facilitate the collaboration on project and program level.
- **Review of the structure and performance of the thematic Working Groups** aimed to make their work more visible by publishing and updating annual roadmaps and reports of progress and disseminating them to stakeholders in the European Commission, Russia and EU Member States (see above the Recommendation considering the Task Force, 4.2.1).
- **Continuation and further improvement of coordinated Calls (CCs) for projects and programs**, which are preferred by a large number of Russian counterparts, as one instrument for future collaboration. CCs may be primarily used to financing those project activities, which (a) are strongly driven by mutual research interests or (b) have potential for a higher output and success for both partners, which can be best exploited through a CC. Both parties need to contribute adequate administrative resources for CC organization.
- **Improvement of coordination between EU-Russia and bilateral cooperation between EU Member States and Russia** to use opportunities for synergies and to fully exploit the established cooperation mechanisms, knowledge and researcher networks developed in bilateral cooperation.
- Establishment of **representations of Russian science organizations** such as the Russian Academy of Sciences in **EU Member States**. They can provide concrete assistance to Russian scientists, working on collaborative projects in the Member States of the EU and they may facilitate EU Russia S&T&I collaboration in general. Furthermore, they can advertise directly in the EU opportunities of collaboration with Russian science institutions and research facilities.
- **Visa facilitation for scientific and academic personnel** between EU Member States and Russia, which might foresee visa-free regime for certain categories, such as those based on jointly agreed projects and programmes.
- **Facilitation of customs procedure** for the exchange of project results, including biological samples, materials and equipment for scientific purposes.

Annex 1: Key Reference Documents

The key background documents relevant for the current status and future development of EU-Russia S&T cooperation include the following (in order of reference to them in the report):

- [Leaflet: EU-Russia relations: A Strategic Partnership](#)
- [EU-Russia Common Spaces Progress Report 2011](#)
- [EU-Russia Partnership and Cooperation Agreement](#)
- [Joint Statement of the Partnership for Modernization, EU-Russia Summit 31 May-1 June 2010](#)
- [Agreement on Cooperation in Science and Technology between the Government of the Russian Federation and the European Community](#)
- [European Union - Russian Federation cooperation in science, technology and innovation: A roadmap for action 2011-2013](#)
- [Agreement for cooperation between the European Atomic Energy Community and the Government of the Russian Federation in the field of controlled nuclear fusion](#)
- [Agreement for cooperation between the European Atomic Energy Community and the Government of the Russian Federation in the field of nuclear safety](#)
- [Strategy for the Innovative Development of the Russian Federation until 2020](#)
- [Development of Science and Technology in the Russian Federation for the period 2013-2020](#)
- [Europe 2020: Europe's Growth Strategy](#)
- [Complex Programme for Biotechnology Development in the Russian Federation up to 2020](#)
- [A Strategic European Framework for International Science and Technology Cooperation](#)
- [Communication by the European Commission 'Enhancing and focusing EU international cooperation in research and innovation: a strategic approach' \(COM\(2012\) 497\)](#)
- [Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Horizon 2020 - The Framework Programme for Research and Innovation](#)
- [European Strategy Forum on Research Infrastructures ESFRI: Strategy Report on Research Infrastructures, Roadmap 2010](#)

Annex 2: List of Stakeholders Interviewed for the Report*

Meetings with European Commission officials in charge of the Working Groups under the Joint S&T Commission

Name	Working Group	Place and Date	Expert(s) involved
BENEDIKTSSON Indiridi	Health	Brussels, 13/12/2012	PK, UM
BISCHOFF Hartwig	Space	Brussels, 13/12/2012	PK, UM
HORVATH Peter	Energy, non-nuclear	Brussels, 13/12/2012	PK, UM
HUGON Michel	Energy, nuclear	Brussels, 13/12/2012	PK, UM
JERING Dietlind	Food, Agriculture, Biotechnology	Brussels, 13/12/2012	PK, UM
KOPANAS Vassilis	eInfrastructures & ICT Research	Brussels, 13/12/2012	PK, UM
PARTYKA Kamila	Mobility	Brussels, 13/12/2012	PK, UM
PEREZ-ILLANA Pablo	Aeronautics	Brussels, 13/12/2012	PK, UM
PETROVA Rositsa	Energy, non-nuclear	Brussels, 13/12/2012	PK, UM

Meetings with Representatives of EU Member State Institutions and Organizations

Name	Institution/organization	Place and Date	Expert(s) involved
ACHTERBERG Jörn	DFG Office in Russia	Moscow, 23/01/2013	PK, UM
AURANEN Eija KOMULAINEN Kari	Finnish National Agency for Technology and Innovation TEKES	Helsinki, 25/01/2013	PK
FREYSSINET Jean-Marie	French Embassy in Moscow	Moscow, 23/01/2013	PK
GRÜNEWALD Jörn MIENERT Marion SONNENBURG Jörn	International Office of German Federal Ministry of Education and Research BMBF	Bonn, 12/12/2012 and 14/12/2012	UM
HEINZ Karsten	German Embassy in Moscow	Moscow, 21/01/2013	PK, UM
KENTNER Susan	Helmholtz Association Office in Brussels	Dec. 2012, Jan. and Feb. 2013 (telephone)	UM
SANDHOP Martin	Helmholtz Association Office in Moscow	Moscow, Dec. 2012 and Jan. 2013	UM
SCHLICHT Michael	German Federal Ministry of Education and Research BMBF	Bonn, Jan. 2013, 05/03/2013 (telephone)	UM
TARARINE Michel	CNRS Office in Russia	Moscow, 23/01/2013	PK, UM
TEN HOLTER Joyce	Embassy of the Netherlands in Moscow	Moscow, 23/01/2013	PK,
YLIKANGAS Mikko	Academy of Finland	Helsinki, 16/01/013	PK

Meetings with Representatives of Russian Institutions and Organizations

Name	Institution/organization	Place and Date	Expert(s) involved
ANDREEV Evgeni CHERNYSHEV Sergey	Central Aerohydrodynamic Institute TsAGI	Moscow, 22/01/2013	UM
BORTNIK Ivan	FASIE	Moscow, 21/01/2013	PK, UM
ERYOMIN Vladimir UGRYUMOV Mikhail	Presidium of RAS	Moscow, 23/01/2013	PK, UM
GOKHBERG Leonid	NRU Higher School of Economics	Moscow, 21/01/2013	PK, UM
KUKLINA Irina	International Centre for Innovations in Science, Technology and Education	Moscow, 22/01/2013	PK, UM
LEVCHENKO Olga	FASIE	Moscow, 22/01/2013	PK, UM
LUKSHA Oleg YANOVSKY Anton	Russian Technology Transfer Network	Moscow, 22/01/2013	PK, UM
MELKONYAN Marina	National University of Science and Technology	Moscow, 23/01/2013	PK, UM
PIKALOVA Anna	NRU Higher School of Economics	Moscow, 22/01/2013	PK
ROSTOVTSEVA Lyudmila	Ministry of Industry & Trade, Dept. of Aviation Industry	Moscow, 21/01/2013	PK, UM
SHAROV Alexander	Russian Foundation for Basic Research	Moscow, 14/02/2013	PK, UM
SHMAKIN Andrey	Institute of Geography, RAS	Moscow, 23/01/2013	PK, UM

* PK = Päivi Karhunen; UM = Uwe Meyer

Annex 3: Success Stories of EU-Russia S&T Cooperation

FP7 Coordinated Calls

7FP KBBE Coordinated call	
Name of the project	FP7-KBBE-2008-2B In silico rational engineering of novel enzymes (IRENE)
Project duration	From 2009-04-01 to 2012-03-31
Research field	Agricultural biotechnology Molecular modelling for rational design of industrial enzymes
Russian funding body	Federal Agency for Science and Innovation of the Russian Federation (FASI), now merged with RMES
Project Coordinator	Organization name: University of Trieste, Italy
Russian Partners	<ul style="list-style-type: none"> • Belozersky Institute Of Physicochemical Biology • B.P.Konstantinov Petersburg Nuclear Physics Institute Russian Academy of Sciences, Gatchina, Russian Federation • Molecular Technologies, Moscow, Russian Federation • Bio/ Technologies, Innovations, Researches Ltd, • Shemyakin and Ovchinnikov Institute of Bioorganic Chemistry - Russian Academy of Science
Project total value €	5 186 379 € (EU contribution: 2 000 000 €)
Main strengths of this cooperation experience	<p>IRENE was the first approbation of coordinated call mechanism, which was a first experience of a parallel research call published by both the EU and Russia and the evaluation of the proposals received was carried out with the participation of Russian experts.</p> <p>Scientific excellence: In the course of the IRENE project the team has found a solution to one of the main problems in the field of biocatalysis.</p>

7FP - Energy	
Name of the project	Fast rechargeable zinc-polymer battery based on ionic liquids (POLYZION)
Project duration	From 2009-08-01 to 2013-01-31
Russian funding body	Federal Agency for Science and Innovation of the Russian Federation (FASI), now merged with RMES
Project Coordinator	C-TECH Innovation Ltd (United Kingdom)
Russian Partners	A.E. Favorsky Irkutsk Institute of Chemistry, Siberian Branch of Russian Academy of Sciences
Project total value (€)	3 474 872€ (EU contribution: 2 400 000 €)
Main strengths of this cooperation experience	<p>POLYZION project is a fine example of one of the 14 projects funded in coordinated calls on nano-sensors launched as an initiative of the EU-Russia Working Group on Nanotechnology (WG Nano). POLYZION project was based on strong collaboration between academia and industry, with both small and medium enterprise partners with specialised knowledge on specific materials, and large industrial partners well versed in battery manufacturing coming together to share best practices.</p> <p>Scientific excellence: POLYZION project was aimed to create an environmentally friendly and affordable rechargeable battery for electric vehicle applications. As an alternative to the heavy and expensive batteries currently used, the new technology proposed by the team will be lightweight, cheaper and less harmful to the environment.</p>

7FP Energy	
Name of the project	«Engine and turbine combustion of bioliquids for combined heat and power production» (BIOLIQUIDS-CHP)
Project type	Russia-EU Coordinated Call
Project details	Duration: 2009-01-01 to 2011-12-31 Contract type: Collaborative project (generic)
Russian funding body	Federal Agency for Science and Innovation of the Russian Federation (FASI), now merged with RMES
Project Coordinator	B.T.G. Biomass Technology Group Bv, the Netherlands
Russian Partners	1. The Likhachev Plant (AMO ZIL) 2. Scientific Research Automobile And Engine Institute (NAMI) 3. Boreskov Institute of Catalysis, Siberian Branch of Russian Academy of Sciences
Project total value (€)	4 309 697€ (EU contribution: 1 602 318 €)
Main strengths of this cooperation experience	Project goals completely correspond to both the EU Member States' and Russian S&T priorities. The project contributed to the increase in cooperation between Europe and Russia in the field of power generation from biomass and Russian part of the consortium got a high reputation in European scientific society. Scientific excellence: the project aimed at the increase in electricity production from biomass by reducing bio-oil production prices and by improving bio-oil quality; reduction of costs of electricity production from biomass; adaptation of existing technologies (bio-oil production, diesel engines and CHP-units) so that they can be used together; improvement of the environment, quality of life, as well as health and safety

7FP People - Marie Curie Actions

7FP - People	
Name of the project	International Foresight Academy (IFA)
Project duration	From 2012-05-01 to 2015-04-30
Funding scheme	7FP Marie Curie Action International Research Staff Exchange Scheme (IRSES)
Project Coordinator	AUSTRIAN INSTITUTE OF TECHNOLOGY GMBH
Project Partners	The University of Manchester (UK); IIASA (Austria); Zurich University of Applied Sciences (Switzerland); Executive Agency for Higher Education, Research, Development and Innovation Funding (Romania); University of Turku (Finland); Interdisciplinary Centre for Technological Analysis and Forecasting (Israel); Center for Strategic Studies and Management in ST&I (Brazil); Latin American School of Social Sciences (Argentina); Foresight Canada; Science & Technology Policy Institute (South Korea)
Russian Partner	National Research University Higher School of Economics
Project total value (€)	391 300 € (EU contribution: 368 500 €)
Main strengths of this cooperation experience	The IRSES project IFA made it possible to establish partnership between research organisations within EU Member States, FP7 Associated states and third countries, including Russia through networking of the partners doing research on the Foresight-study (FS) field, a joint programme of researchers exchange (summer/winter schools for early stage researchers, seminars and academic workshops) and sharing best practices in FS area. Scientific excellence: The International Foresight Academy became the first organization to bind together Foresight activities around the globe and from contrasting cultural and political contexts. Foresight is used differently in various regions of the world. Added value of Foresight is in the shared goals and visions among a group of participants from different sectors, the development of networks, and the combination of relevant information on current trends and future developments with actor-based information and attitudes.

7FP - People	
Name of the project	Multifunctional Medical Diagnostic LASER System (MEDI-LASE)
Project duration	From 2010-05-01 to 2014-04-30
Funding scheme	7FP Marie Curie Action Industry-Academia Partnerships and Pathways (IAPP)
Project Coordinator	UNIVERSITY OF DUNDEE (UK)
Project Partners	ASKION GMBH (Germany)
Russian Partner	SCIENTIFIC-PRODUCTION ENTERPRISE LAZMA LTD
Project total value (€)	EU contribution: 1 630 569 €
Main strengths of this cooperation experience	The MEDI-LASE pulls together academic partners research experience, SMEs creativity and capacities of traditional manufacturing industries in purpose to create new ideas, to develop new technologies and finally to produce competitive innovative products. A joint research programme MEDI-LASE performs a capitalising on the knowledge and expertise of the partners through exchanges of researchers and transfers of knowledge. Implementation of the project activities overcame scientific and technical challenges to the realisation and adoption of a unique multifunctional non-invasive laser diagnostic system. The work comprises experimental research in the optical analysis of blood and tissue to direct the exploitation of the developed system.

Russian Federal Target Program on Research and Scientific-Pedagogical Personnel for Innovative Russia

Russian Federal Target Program on Research and Scientific-Pedagogical Personnel for Innovative Russia for 2009 to 2013, call 1.5	
Name of the project	Reconstruction of the Palaeoclimatic Conditions of Holocene in the Russian Arctic with Innovative Methods and Using Palaeobiological, Geochemical and Palaeomagnetic Proxies of Lake Sediment Archives
Name of beneficiary	Dr. Larisa Nazarova The Russian partner organizations: the North-East Federal University (NEFU) in Yakutsk and Kazan Volga Federal University (KFU) German partner organization: Alfred Wegener Institute for Polar and Marine Research (AWI)
Russian funding body	Ministry of Education and Science of the Russian Federation
Funding body from the EU	German Federal Ministry of Research and Education (BMBF)
Rough date	Spring 2011
Main strengths of this cooperation experience	The joint work under the project called "Reconstruction of the Palaeoclimatic Conditions of Holocene in the Russian Arctic with Innovative Methods and Using Palaeobiological, Geochemical and Palaeomagnetic Proxies of Lake Sediment Archives" received support from a Russian Federal Target Programme and the German Federal Ministry of Research and Education (BMBF). Joint German-Russian Laboratory for the Investigation of the Environmental Dynamics in the Terrestrial Arctic (Biological Monitoring - BioM) has been established. "Activity 1.5 is our big luck and a real gift of fortune," Nazarova says. "This program makes a great contribution to the enhancement of Russia's positive image, demonstrating that Russian resources can be effectively used for joint projects with Europe."

European participation in the Russian Federal Target Programme «Measures to attract Leading Scientists to Russian Educational Institutions»

1st call (2010): 39 grant contracts were signed. Among the grantees 20 are Russian (including 15 with double residence), 12 winners are from the EU (out of them 7 German, 1- Italy, 1 – Netherlands, 1 – Greece, 1 – France/USA, 1 - Spain) and US-citizens (10). Totally 507 applications from leading scientists together with 179 higher educational institutions.

2nd call (2011): 38 grant contracts were signed. Among the grantees 19 are Russian (including 13 double citizenships), 10 US-citizens, 12 EU citizens (2 –Germany, 3 –Italy, 2 – France, 1 –Austria 1 – Netherlands, 1 – Belgium, 1 - Bosnia and Herzegovina, 1 - Greece). 517 applications were received from researchers with 176 Russian universities.

3rd call (2012): 719 applications were received, among them 379 are from Russian citizens (53 of them have double citizenship and live abroad) and 340 are foreign citizens. The results of the 3rd call will be announced on the 25th of April 2013.

In the 3rd call for the first time not only institutions of higher education but also scientific centers were allowed to take part in the call and invite leading scientists. The funding for 2013-2015 is the following: the grants of 90 million roubles each are given for 3 years with the possibility of further prolongation for 2 more years.

Winners of Russian Federal Target Program, Call 220 “Leading scientists”

Winner of RFTP Call 220 at Tomsk Polytechnic University	
Name of the project	Nuclear Power and Technologies, Tomsk Open Laboratory for Material Inspection (TOLMI)
Name of beneficiary	Prof. Hans-Michael Kroening (Germany)
Rough date	Autumn 2010
Nature of the collaboration	An expert in nuclear power and technologies, a world-known scientist Prof. Hans-Michael Kroening has cooperated with Tomsk Polytechnic University since 1993. In June, 2010 the Government of the Russian Federation announced an open grant contest aimed at supporting scientific research projects implemented at Russian universities under the supervision of leading scientists. TPU researchers invited Prof. Hans-Michael Kroening to participate in this competition and prepare joint project proposal. Prof. Hans-Michael Kroening agreed. The Project proposal was successful and in 2010 he arrived at Tomsk Polytechnic University to start his activity within the grant of the Government of the Russian Federation aimed at attracting world-class scientists to Russian universities to open advanced laboratories performing research in energy efficiency and energy saving.
Experience and Result	Nowadays Prof. Hans-Michael Kroening is the Scientific Leader of Tomsk Open Laboratory for Material Inspections of TPU. The laboratory was founded as result of winning in open competition to attract top scientists in the Russian institution of higher education. The Laboratory activity objectives are expansion of international cooperation between TPU and leading foreign scientific organizations (including universities); conducting of research & development work; creation of hi-tech products with applying of innovative NDT methods; advanced training of NDT specialists for Tomsk special economic zone and Russia as a whole; creation of small-scale innovative enterprises on the basis of TOLMI.

Winner of RFTP Call 220 at Kuban State Medical University (KSMU)	
Name of the project	Medical Science and Technology, Laboratory on regenerative medicine at KSMU
Name of beneficiary	Macchiarini Paolo
Rough date	Autumn 2011
Nature of the collaboration	On the basis of the Kuban Medical University Italian surgeon Prof. Paolo Macchiarini creates a laboratory on regenerative medicine. The laboratory team has an ambitious goal to learn how to grow human organs in two-year time. Prof. Macchiarini himself admits that the university, despite having a solid clinical base, "is not big enough" for this level of studies, and in order to achieve significant results "it is necessary to speed up greatly". Prof. Macchiarini marked 3 goals to achieve: 1) establish the laboratory of regenerative medicine 2) conduct clinical trials corresponding to the means of bioethics 3) conduct several transplanting surgeries in two-year time
Experience and Result	The centre of regenerative medicine of KSMU was built and equipped in unbelievably short terms – it took less than a year. Today this laboratory is one of the best not only in Russia, but in Europe as well. Already two patients were discharged from Krasnodar Clinical Hospital on the 14th of July, 2012, after successful first bioartificial stem-cell based laryngo-tracheal transplantation performed by Paolo Macchiarini, Professor of Regenerative Medicine of Karolinska Institute (Sweden) and Vladimir Porhanov, head of oncological and thoracic department of Kuban State Medical University (Russia). The first bioartificial stem-cell based laryngo-tracheal transplantation was performed on June 19 th 2012 at the Krasnodar Regional Hospital (Russia) by Prof. Macchiarini and his Russian team. Schools and trainings for young scientists are constantly organized

Interaction between thematic Technology Platforms and Clusters

Interaction between thematic Technology Platforms and Clusters	
Name of Russian partner	Russian Technology Platform "Bio-industry and Bio-resources - BioTech2030" (http://www.biotech2030.ru)
Name of the EU partner	German Cluster of Industrial Biotechnologies CLIB2021
Funding scheme*	Funding from the Russian side: 5 million roubles (180 000 \$) was provided from the Russian Federal Target Programme "Priority directions of Russian scientific-technological complex research and development for 2007-2012", government grant 2009-02-1.2-03-01-079 Funding from the German side: 180 000 \$ was provided by BMBF
Host organization	A.N. Bach Institute of biochemistry RAS (INBI RAS)
Mutual benefits	German Cluster of Industrial Biotechnologies CLIB2021 is a collective member of the Russian Technology Platform "Bio-industry and Bio-resources - BioTech2030". On September 30 th , 2010, CLIB 2021 opened a representative office in Moscow at the A.N. Bach Institute of Biochemistry RAS. The main purpose was not only to expand its activities in Russia and simplify networking, but also perform joint management of scientific and technological research projects. BioTech2030 and CLIB2021 joint efforts to implement "BIO2020" and are currently working on several bioeconomy projects together with RT-Biotechprom, AIRR, GK-Rostekhnologii.

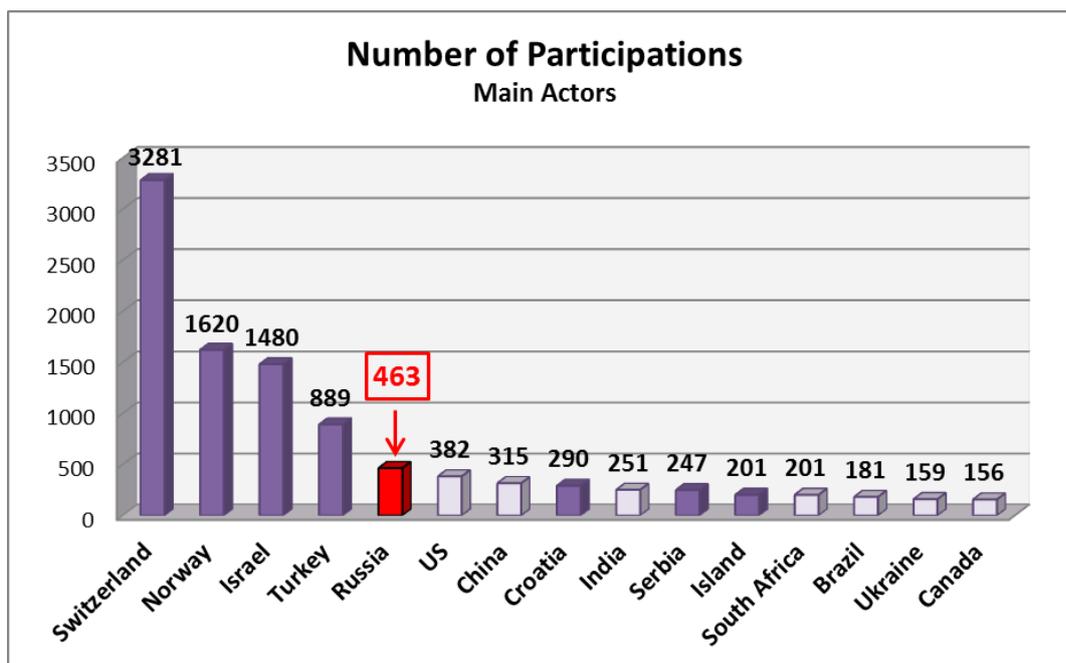
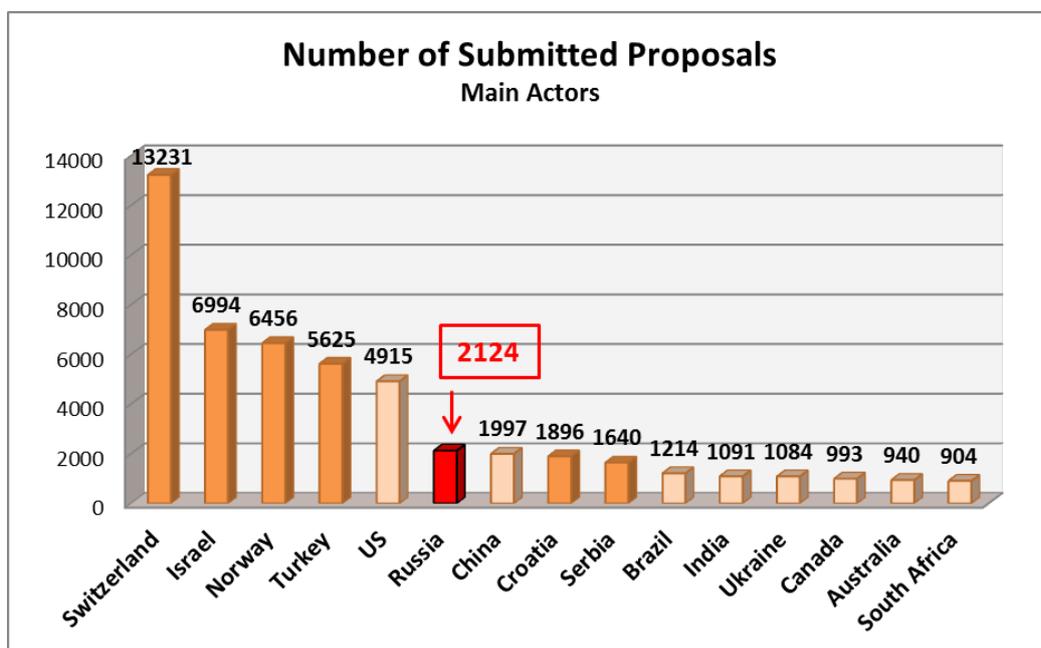
**this is a fine example of the situation, where the funding of joint EU-Russia activities can't be properly aligned. In the case of interactions between Russian Technology Platform "Bio-industry and Bio-resources - BioTech2030" and German Cluster of Industrial Biotechnologies CLIB2021 additional funding on certain activities were provided from the German-Russian Cooperation Network Biotechnology, Russian government support for "Development of innovative infrastructure of educational institutions" (Decree №219)*

Bilateral cooperation between EU Member States and Russia

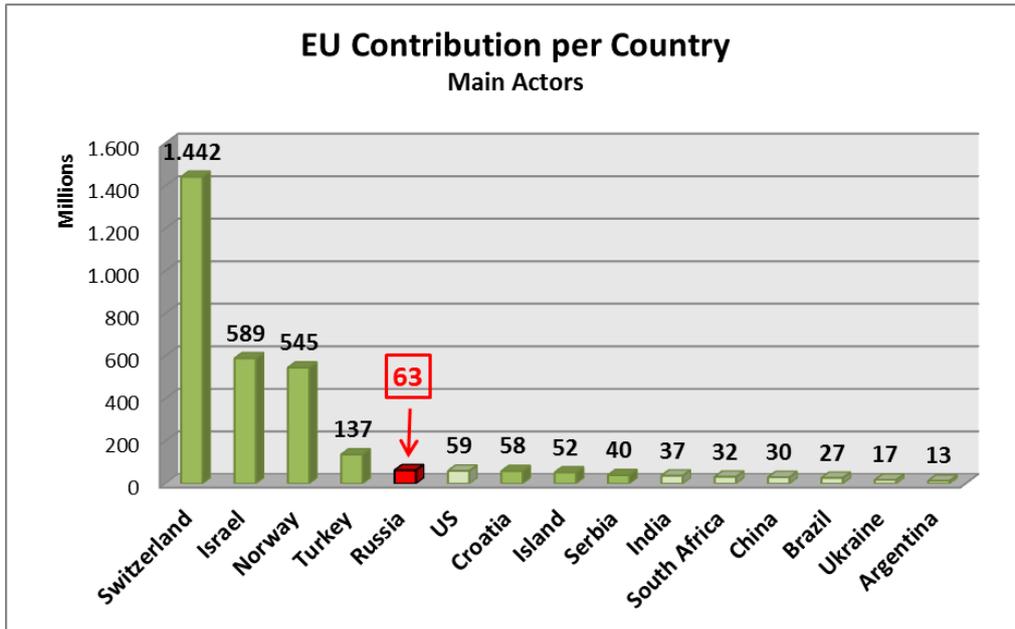
Cooperation of the Helmholtz Association of German Research Centres (HGF) with Russia	
Number of FP7 projects	95 projects with Russian partners, 29 of them coordinated through HGF Centres.
Most active HGF Centres (number of FP7 projects)	DLR -Deutsches Zentrum für Luft – und Raumfahrt (40), AWI -Alfred Wegener Institute for Polar Research (9), FZJ -Helmholtz Research Center Juelich (9), HZ-KIT Karlsruhe Institute of Technology (8), HZ-GSI -Gesellschaft für Schwer-Ionen Forschung (7)
Most active Russian partner institutions in FP7 projects	The Central Aerohydrodynamic Institute (TsAGI), Central Institute of Aviation Motors, RAS Institutes, Moscow State University, NRU Moscow Power Engineering Institute.
Key fields of joint research (number of FP7 projects)	Aeronautics and Air Transport (24); Infrastructures (18); Euratom Fission (9); Environment (8); Space (8); NMP (7); International Cooperation (5).
Projects/programs of bilateral cooperation	<p>XFEL: Construction underway at DESY in Hamburg (RUS financial contribution ca. 25%), participation of other States and the EU.</p> <p>FAIR: Construction underway at GSI in Darmstadt (RUS financial contribution ca. 18%), participation of other States and the EU.</p> <p>Cooperation Agreement between Kurchatov Institute and DESY.</p> <p>Cooperation Agreement between JINR in Dubna and BMBF (Fed. Ministry of Education and Research). Scientific coordinator is HZ-GSI.</p>
Helmholtz-Russia Joint Research Groups (HRJRG)	<p>HGF has carried out the HRJRG program since 2007 jointly with the Russian Foundation for Basic Research (RFBR). The HRJRG are designed to intensify the scientific co-operation between the Helmholtz research centres and Russian scientific institutions and universities in order to set new impulses in current research programs of HGF. HRJRGs bring together research capacities from one or more Russian institutions involved in scientific research and one or more Helmholtz Centres, thus creating a centre of excellence with international standing and attractiveness to researchers in a key area of research. In general researchers of both countries should contribute equally to the competence of the Helmholtz-RFBR Partnership by working on a defined research project, which is divided into coordinated work packages designed to reach a common research goal.</p> <p>Five joint calls for proposals have been published since 2007. Altogether 32 joint research groups have been supported. In January 2013, 20 groups were running. The HRJRG-groups are funded by the Helmholtz Association for the duration of three years with 130,000 euros per year. The RFBR co-funds the Russian partner institution with 1,200,000 roubles (approximately 30,000 euros) per year. So the total investment on behalf of the Helmholtz Association currently adds up to 12.48 million euros.</p> <p>The HRJRG are thematically covering all six Helmholtz research fields: Energy; Earth and Environment; Health; Key Technologies; Structure of Matter; and Aeronautics, Space and Transport. Basic research as well as application-oriented research is carried out. Examples of project titles: HRJRG-116 “Genetic susceptibility to tuberculosis”, HRJRG-221 “Lake Baikal and biological effects of global change (LabEglo)”, HRJRG-411 “Tailoring nanoscaled features in novel steels for high-temperature applications using ion beam modification (ODS-HiTs)”. Especially early stage researchers benefit from this program. A special concept for the exchange of young scientists is part of the application.</p>

Annex 5: Overview of EU-Russia Cooperation Statistics in FP7¹

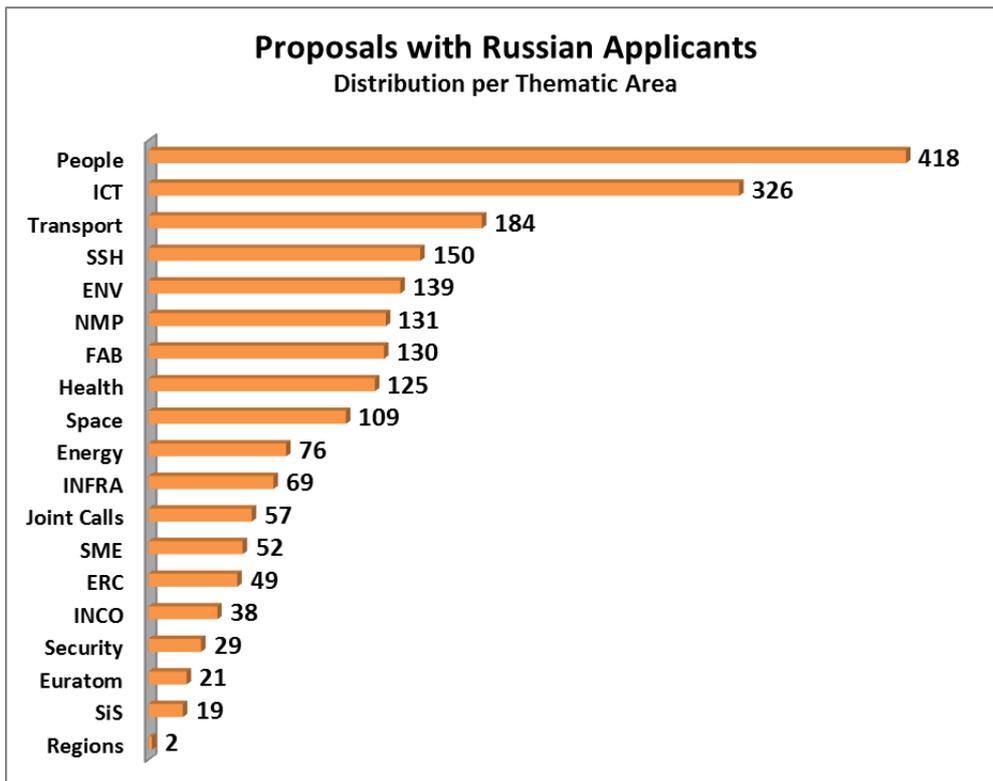
FP7 participation of Russia in comparison to other non-EU or Associated Countries



¹ The following statistics and data include all FP7 calls in all four Specific Programmes of FP7 (Cooperation, People, Capacities, Ideas) and Euratom FP7, except the International Outgoing Fellowships (IOF) and the International Research Staff Exchange Scheme (IRSES) of the Marie Curie Scheme.

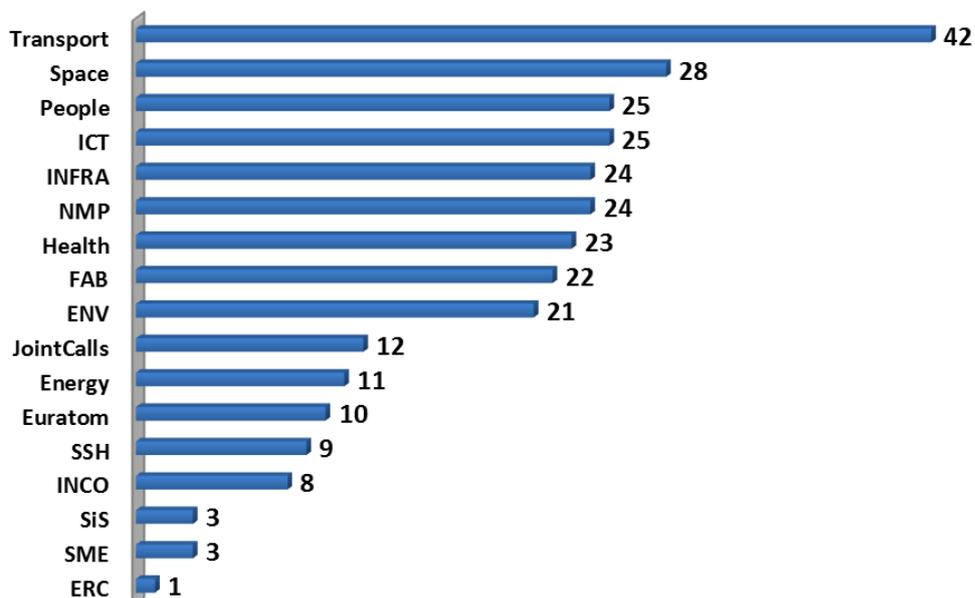


Russian FP7 participation by area



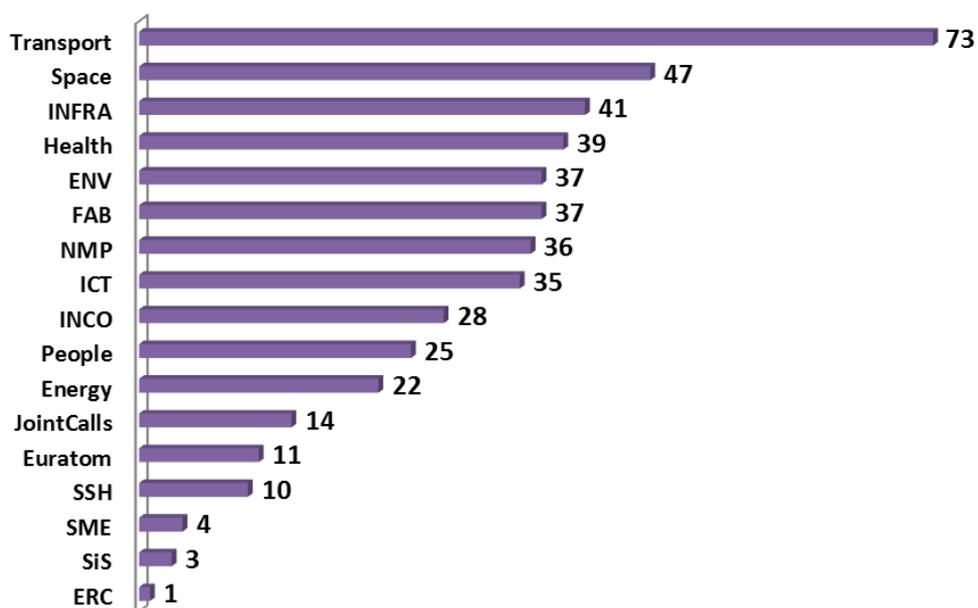
Financed Projects with Russian Participation

Distribution per Thematic Area



Russian Participations

Distribution per Thematic Area



Total amount of EU financial contribution (1) to projects with Russian participation, (2) and to Russian participants of these projects by area.

Area	Total EU Contribution	EU Contribution to Russia
Transport	186.854.471,59	8.013.623,93
Health	152.851.573,59	6.541.490,10
Space	75.468.784,93	6.402.300,39
Infrastructures	131.638.416,05	6.300.944,48
ICT	70.984.154,00	5.937.082,00
Joint Calls/Eragnet	63.006.065,12	5.680.495,70
NMP	112.799.489,00	5.464.423,10
Environment	134.378.459,14	3.494.881,28
Energy	66.055.070,75	3.245.378,00
People	45.082.640,97	2.988.726,92
KBBE	69.459.061,49	2.739.766,13
INCO	12.991.504,14	2.011.731,77
Euratom	33.615.291,68	1.938.241,00
SSH	73.672.264,73	1.313.392,50
SME	17.383.890,00	1.075.725,60
Science in Society	11.099.335,20	575.032,00
ERC	484.000,00	175.738,00
Total	1.257.824.472,38	63.898.972,90

FP7 participation of Russia by organization type*



*REC – Research organisations; HES- Higher or secondary education; PRC - Private for profit (excluding education); PUB -Public body (excluding research and education); OTH – other

FP7 participation of Russia in view of bilateral cooperation with EU Member States

Nationality of the coordinators of projects with Russian participation (main actors)²:

- 1. Germany (61 projects)**
- 2. UK (35)**
- 3. France (33)**
4. Italy (30)
5. Russia (19)³
6. Netherlands (17)
7. Belgium (13)
8. Greece (12)
9. Finland (11)
10. Spain (10)

Main collaborative links in projects with Russian participation (project participants):

- 1. Germany (540)**
- 2. France (442)**
- 3. UK (431)**
4. Italy (371)
5. Spain (223)
6. Netherlands (196)
7. Belgium (162)
8. Sweden (150)
9. Greece (118)
10. Switzerland (113)

² Includes coordinators of return phases of Marie Curie International Incoming Fellowship (IIF) grants

³ Includes 1 coordinator of an FP7 INCO support action, 1 coordinator of an FP7 collaborative research project, and 17 coordinators of return phases of Marie Curie IIF grants

Coordinated Calls with Russia under FP7 (According to Date of Publication)

Energy (2007)

Call identifier: FP7-ENERGY-2008-RUSSIA

EU financial contribution: EUR 4 million

Funding of Russian participants: EUR 4 million from the Russian Ministry of Education and Science (its Federal Agency for Science and Innovation ROSNAUKA)

Agri, Food and Biotechnology (2007)

Call identifier: Organized under FP7-KBBE-2008-2B call

EU financial contribution: EUR 4 million

Funding of Russian participants: EUR 4 million from ROSNAUKA

Health (human genetics and health diseases) (2008)

Call identifier: Organized under FP7-HEALTH-2009-single-stage call

EU financial contribution: EUR 6 million

Funding of Russian participants: EUR 4 million from ROSNAUKA

Nanosciences, Nanotechnologies, Materials and New Production (1) (2008)

Call identifier: FP7-NMP-2009-EU-Russia

EU financial contribution: EUR 4.65 million

Funding of Russian participants: Similar budget from ROSNAUKA

Nuclear Fission and Radiation Protection (2008)

Call Identifier: Organized under FP7-Fission-2009

EU financial contribution: EUR 3.5 million

Funding of Russian participants: Similar budget from ROSATOM

Aeronautics and Transport (1) (2009)

Call identifier: FP7-AAT-2010-RTD-RUSSIA

EU financial contribution: EUR 4 million

Funding of Russian participants: EUR 4 million from the Ministry of Industry and Trade of the Russian Federation, Department of Aviation Industry

ICT (2010)

Call identifier: FP7-ICT-2011-EU-Russia

EU financial contribution: EUR 4 million

Funding of Russian participants: EUR 2 million from ROSNAUKA

Aeronautics and Air Transport (2) (2012)

Call identifier: FP7-AAT-2013-RTD-RUSSIA

EU financial contribution: EUR 4.5 million

Funding of Russian participants: EUR 4.5 million from the Ministry of Industry and Trade of the Russian Federation, Department of Aviation Industry

Nanosciences, Nanotechnologies, Materials and New Production (2) (2010)

Call identifier: FP7-NMP-2011-EU-RUSSIA

EU financial contribution Budget: EUR 4.5 million

Funding of Russian participants: Similar budget from ROSNAUKA

Annex 5: Bilateral S&T Agreements between EU Member States and Russia⁴

*Countries marked with * have signed bilateral modernization partnerships with the Russian Federation, modernization partnerships with countries marked with ** under preparation.*

Austria*

- Agreement between the Government of the Russian Federation and the Government of the Republic of Austria on cooperation in science and technology (19 May 2011, previous agreement from 1995)
- Agreement between the Government of the Russian Federation and the Government of the Republic of Austria on cooperation in the field of technology infrastructure (23 April 2012)

Belgium*

- Agreement on Economic, Scientific and Technological Cooperation between the USSR and the Belgium-Luxembourg Union (26 July 1969) establishes the general principles of cooperation in these areas.

Bulgaria*

- Agreement between the Ministry of Education and Science of the Russian Federation and the Ministry of Education, Youth and Science of the Republic of Bulgaria on cooperation in science and technology (14 October 2010)

Cyprus*

- No bilateral S&T cooperation agreement with Russia

Czech Republic*

- Agreement between the Ministry of Science and Technology Policy of the Russian Federation and the Ministry of Education, Youth and Sport of the Czech Republic on cooperation in science and technology (23 May 1995)
- Agreement between the Government of the Russian Federation and the Government of the Czech Republic on cooperation in fields of culture, science and education (1996)
- Agreement between the Government of the Russian Federation and the Government of the Czech Republic on economic, industrial and scientific-technical cooperation (2005)

Denmark*

- Agreement on the development of economic, industrial, scientific and technological cooperation between the Russian Federation and the Kingdom of Denmark (26 October 1992)
- Agreement between the Government of the Russian Federation and the Government of the Kingdom of Denmark on cooperation in culture, science and education (4 November 1993)
- Agreement between the Government of the Russian Federation and the Government of the Kingdom of Denmark on technical cooperation (26 February 1997)

Estonia

- No bilateral S&T cooperation agreement with Russia

Finland*

- Agreement between the Government of the Russian Federation and the Government of the Republic of Finland on cooperation in culture, science and education (11 July 1992)
- Agreement between the Government of the Russian Federation and the Government of the Republic of Finland on cooperation in science and technology (11 July 1992, previous agreement with the USSR from 1971)

⁴ Note: The list is based on information provided by the Russian Ministry of Education and Science in the Russian language, and translated into English by the authors of this report.

France*

- Agreement between the Government of the Russian Federation and the Government of the Republic of France on cooperation in science and technology (22 July 1992, previous agreement with the USSR from 1990)
- Joint Statement on the Strategic Partnership between the Russian Federation and the Republic of France in the field of education, research and innovation (20 September 2008)

Germany*

- Joint Statement on Strategic Partnership between the Russian Federation and the Federal Republic of Germany in the field of education, research and innovation (11 April 2005)
- Agreement between the Government of the Russian Federation and the Government of the Federal Republic of Germany on cooperation in science and technology (16 July 2009, previous agreement with the USSR from 1986)

Greece**

- Agreement between the Government of the Russian Federation and the Government of the Hellenic Republic on economic, industrial and scientific-technological cooperation (30 July 1993)

Hungary*

- Agreement between the Government of the Russian Federation and the Government of Hungary on economic, industrial and scientific-technological cooperation (30 July 1993)

Ireland*

- No bilateral S&T cooperation agreement with the Russian Federation

Italy*

- Agreement between the Government of the Russian Federation and the Government of the Republic of Italy on cooperation in science and technology (1 December 1995, previous agreement with the USSR from 1989)
- Memorandum of Understanding between the Ministry of Education and Science of the Russian Federation and the Ministry of Education, Universities and Research of the Republic of Italy on cooperation in field of tokamak "IGNITOR" construction and other initiatives in nuclear physics (26 April 2010)

Latvia*

- No bilateral S&T cooperation agreement with Russia

Lithuania*

- A governmental agreement on cooperation in the fields of culture, science and education is under preparation.

Luxemburg*

- Agreement between Russia and Luxembourg on cooperation in culture, education and science (signed on 28 June 1993; in force since 26 August, 1996)
- Agreement between Russia and Luxembourg on cooperation in the field of health, medicine and the medical industry (28 January 1998)

Malta

- The Protocol between the Government of the Russian Federation and the Government of Malta on the inventory of contracts (10 September 1993) declares the validity of the Agreement between the Government of the Soviet Union and the Government of the Republic of Malta on cooperation in culture, education and science (18 March 1982)

Netherlands*

- Agreement between the USSR and the Kingdom of the Netherlands on the development of Economic, Industrial and Technical Cooperation from 1975 establishes the general principles of cooperation in these areas.

Poland*

- Agreement between the Government of the Russian Federation and the Government of the Republic of Poland on cooperation in science and technology (25 August 1993)

Portugal**

- Agreement between the Government of the Russian Federation and the Government of the Republic of Portugal on cooperation in culture and science (21 July 1994)

Romania*

- Agreement between the Ministry of Education and Science of the Russian Federation and the Ministry of Science and Technology of Romania on cooperation in science and technology (2 March 1995)

Slovakia*

- Agreement between the Ministry of Science and Technology Policy of the Russian Federation and the Ministry of Education and Science of the Slovak Republic on cooperation in science and technology (3 February 1995)
- Agreement between the Government of the Russian Federation and the Government of the Slovak Republic on protection of mutual interests in the use and definition of intellectual property rights (7 November 2006)

Slovenia*

- Agreement between the Ministry of Education and Science of the Russian Federation and the Ministry of Science and Technology of the Republic of Slovenia on cooperation in science and technology (23 June 1994)

Spain*

- Agreement between the Government of the Russian Federation and the Government of the Kingdom of Spain on cooperation in science and technology (15 November 2001)

Sweden*

- No bilateral S&T cooperation agreement with Russia
- Agreement between the Government of the Russian Federation and the Government of the Kingdom of Sweden on cooperation in the field of exploration and utilization of outer space for peaceful purposes (2 March 2010)

United Kingdom*

- Agreement between the Government of the Russian Federation and the Government of the United Kingdom of Great Britain and Northern Ireland on cooperation in science and technology (28 May 1996)

Annex 6: SWOT Analysis of EU-Russia S&T Cooperation

<p>STRENGTHS</p> <ul style="list-style-type: none"> • S&T cooperation is one of the most successful areas in the EU-Russia cooperation • High interest in cooperation from both sides: Russia most successful third country in FP7 due to open format of FP • Mostly the same thematic priorities in S&T policies • Compatible science potential, both partners are strong in fundamental science and have high-quality science facilities/centres • There are successful initiatives of multilateral cooperation (such as calls implemented in the ERANet RUS project). • Jointly-owned research infrastructures already existing, new underway (XFEL, FAIR) • Strong bilateral linkages between several EU Member States and Russia, including of representations of EU Member State science organizations in Russia • Both sides have large number strongly interested, well-educated and committed individuals to cooperation • Russian investments to research in universities (such as NRU program) have enlarged the pool of potential participants in cooperation • The funding instruments and principles are increasingly harmonizing (RMES adopting EU procedures and experience) <p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • Cooperation will contribute to the competitiveness of EU and Russia on the global level • S&T cooperation can become a concrete element of realization the EU-Russia Strategic Partnership • S&T cooperation could be used as "test bed" for EU-Russia integration initiatives such as visa-free regime • Innovation component is included to both H2020 and Russian S&T Program 2013-2020, which can facilitate the integration of innovation into S&T cooperation • Cooperation will further intensify, if the partners will actively promote openness to each other's programs • Association of Russia to EU H2020 would bring the cooperation on the next level • Russia's new Federal Targeted Program on S&T 2013-2020, that is currently under elaboration, will include a sub-program for international cooperation • Russian scientific diaspora in the EU is a resource that can be used more effectively to foster cooperation • There is yet unexploited scientific potential in Russia, for example in the Far Eastern regions • Bilateral cooperation instruments could be increasingly used to support EU-level cooperation (e.g. preparatory grants for joint EU applications) • The increased joint use of research infrastructure through the integration of large Russian science centres (e.g. Mega Science Projects) in ESFRI-Roadmap would strengthen the cooperation 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> • Regulative and legal barriers for cooperation (visa, customs procedures for sample and equipment transfer) • Administrative barriers for cooperation at program level (EU calls for proposals vs. tenders in Russia, different evaluation procedures and criteria) • Cooperation is imbalanced in some areas (mobility dominated from Russia to EU) • Cooperation often bound to strongly committed individuals, lack of sustainability after change of persons in charge. • Imbalanced financial commitment of funding bodies to some joint projects • Lack of coordination between other EU-Russia policies (e.g. energy research and energy dialogue) • Lack of internal coordination and information within the European Commission (limited exchange between EU institutions/DGs), and between Russian ministries • Different priorities in science and education policy and economic policy in some EU Member States hamper integration of innovation into S&T cooperation • Low visibility of Russian science and opportunities for joint R&D projects in the EU, including lack of information about its involvement in FP and high capabilities (no foreign representations of research institutions such as RAS) • Lack of administrative/managerial capabilities at some research organizations, language barrier <p>THREATS</p> <ul style="list-style-type: none"> • S&T cooperation may become victim of tensions in EU-RU relations (energy, transport), and of internal politics (NGO legislation in Russia) • Diverging views of EU and Russia about most preferred instruments for cooperation (e.g. coordinated calls) may hamper further enhancement in S&T cooperation • Sustainability of results of INCO projects is threatened by lack of financing for them after the project expiration (e.g. maintenance of the S&T Gate RUS.EU portal) • International cooperation component of the Russian S&T program 2013-2020 may receive only limited funding • There may be a drop in Russian scientists' bottom up participation in EU programs (H2020) due to uncertain financing • Both parties may redirect their focus of S&T cooperation to other large countries and regions due to global competition in science • Cumbersome bureaucracy related to international research visits may continue establishing barriers for mobility between the EU and Russia
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