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EUROPEAN RESEARCH AREA AND INNOVATION COMMITTEE
Strategic Forum for International S&T Cooperation

Secretariat

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NOTE

From:	SFIC Working Group on Russia
To:	SFIC delegations
Subject:	Strategic Research and Innovation Agenda (SRIA) towards Russia of EU Member States and the European Commission organized in SFIC

Delegations will find in the annex the Strategic Research and Innovation Agenda (SRIA) towards Russia of EU Member States and the European Commission organized in SFIC, as agreed by the SFIC Working Group on Russia.

The document represents the views of the SFIC Working Group on Russia, which is composed by the following delegations: Austria, Estonia, Finland, France, Germany (Chair), The Netherlands, Poland, United Kingdom, Norway, Switzerland and the European Commission (DG Research and Innovation).

ANNEX

Strategic Research and Innovation Agenda (SRIA) towards Russia of EU Member States and the European Commission organized in SFIC[1]

1. Background

The Strategic Forum for International Scientific and Technological Cooperation (SFIC) is an advisory group to the European Council and the Commission in the field of International Cooperation in Science & Technology (S&T). SFIC is composed by the European Commission, all European Union Member States and several non-EU countries as observers (Associated Countries, AC).

The EU Commission and the Member States agreed in 2008 to form a European Partnership in the field of international scientific and technological cooperation. The aim was to share information, to pool relevant knowledge concerning third countries - in particular analyses of their S&T resources and capabilities -, to ensure regular consultations between the partners and coordinate activities of a similar nature. In this context SFIC approaches a joint strategic agenda towards Russia. Research and development was also identified as one of the headline targets in the EUROPE 2020 Strategy for smart, sustainable and inclusive growth.

The SFIC Working Group on Russia has the objective to advise the SFIC on jointly developing a coordinated approach towards a more coherent science, technology and innovation (STI) cooperation strategy with the Russian Federation. The Working Group also contributes to the EU's roadmap for STI cooperation with Russia. The added value will consist of defining and coordinating a set of common interests of the EU, MS and AC in STI cooperation with Russia – with regard to policies, programmes and research infrastructures.

At the national level the EU Member States have also established international strategies and programs for supporting the development of innovative solutions. These are expected to be the factors that drive our prosperity and support our quality of life. Several Member States and Associated Countries have their own internationalization or European Research Area strategies.

Russia has defined its goals in technological, science and economic sectors in a strategy paper "Innovative Russia 2020", which was adopted in 2011. The strategy is ambitious, but has not reached its full potential. Currently, Russia is facing economic problems which question the execution of the strategy. Independent, peer-reviewed publication of scientific results is an asset of the research area in Europe and worldwide. The re-establishment of review boards in Russian research institutions is seen with concern and criticism in Europe and elsewhere.

[1] Strategic Forum for International Scientific and Technological Cooperation. SFIC was established through the Competitiveness Council conclusions of 2 December 2008 on a European partnership for international S&T cooperation. The SFIC mandate is found in document 7308/16. The Secretariat of the Forum is provided by the General Secretariat of the Council of the EU. http://ec.europa.eu/research/iscp/index.cfm?pg=sfic

The STI cooperation between Russia, the EU and individual EU MS has continued for several years on multilateral and bilateral level. The implementation of multilateral joint funding mechanisms on the level of EU member states started with the successful ERA.Net RUS in 2009 and has been further developed with its successor ERA.Net RUS Plus in 2014. The reinforcing of international co-operation between the EU and Russia is stipulated in the framework of Horizon 2020. It is the main instrument of cooperation in the areas of research and innovation at the EU level, with nearly €80 billion of funding available for years 2014 to 2020. It aims at fostering innovation through collaboration. Russia has co-funding mechanism for Russian participants of the Horizon 2020 programme.

Russia was the leading international partner in EU's Research and Innovation funding programme FP7 for years 2007-2013. Many projects are still running. A new EU-funded project (CREMLIN) was launched in 2015. It is a flagship initiative in EU-Russia Research and Innovation cooperation with the objective to build and strengthen enduring scientific networks between European large-scale research infrastructures and Russia's 'mega-science' facilities. In September 2014 the European Commission published a roadmap for international cooperation with Russia which provides examples for priority setting in the STI cooperation (e.g. aeronautics research, ICT research, research infrastructures). This COM approach will be further developed jointly with the EU MS. Also in the sphere of joint research infrastructures on the MS level good practice is in place.

Current political situation sets the framework for cooperation between the EU and Russia but does not prevent cooperation on scientific or people-to-people level. However, if EU-sanctions concern the mobility or the assets of listed individuals or the export of high technology goods they are fully applied and may have secondary impacts on scientific co-operation.

2. SRIA objectives

The SRIA should endorse the short- and medium term objectives defined for the SFIC initiative towards Russia as written in the *SFIC-Russia Concept Note:*

- Mutual learning between SFIC members about their cooperation strategies with Russia, targeting aspects of scientific excellence, science diplomacy and collaborative innovation
- Developing a coherent joint strategic roadmap and a strategic agenda for STI collaboration with Russia, built on common objectives and priorities for cooperation
- Coordinating national and EU actions to create and use "European added value" e.g. through linking of joint initiatives and projects that are complementary
- Establishing dialogue processes for the implementation of a joint STI strategy (e.g. working groups, STI committee)
- Advancing the multilateral framework for joint STI collaboration of MS/AC and EC with Russia through SFIC advice to the respective actors e.g. in view of
    - establishing sustainable cooperation structures,
    - addressing the framework conditions for cooperation in research and innovation
    - enhancing joint funding mechanisms building on the ERA.Net RUS,
    - fostering the establishment and reciprocal scientific cooperation between research infrastructures and identifying possible reciprocal opening of joint research infrastructures,
    - enhancing innovation related cooperation addressing societal challenges.

Generally, the SRIA aims at realizing the following concrete tasks within a time-frame of five years:

- **Connecting scientific excellence**
  between Russia and Europe (e.g. supporting/creating common institutions; involving researches in joint research activities);
- **Enhancing cooperation in research and innovation-related activities,**
  making use of Russia's huge potential in innovation (e.g. involving European and Russian businesses (SMEs) in joint research);
- **Raising the mobility level of academic personnel as well as students and innovation actors**
  e.g. setting up or widening common mobility schemes, enhancing mobility to and from all Russian regions

The SRIA towards Russia will be based upon a challenge-based approach that is driven by researchers (bottom-up). This means, principally, cooperation in all scientific fields of joint interests should be endorsed on a case by case basis.

3. Suggestions for joint activities

3.1 Challenges and Opportunities

The restructuring of the Russian research system is no doubt a challenge for the institutions and people directly affected on the Russian side. However, for the international STI cooperation with Russia the framework conditions have improved. Competition based funding of research projects is developing and Russia participate at the EU research arenas, including parallel calls with Horizon 2020 and in other mechanisms.

In spite of challenges represented by the use of different languages, visa and custom issues and questions being asked about the publication check-up on the Russian side, the European research communities should be encouraged to continue its rich and diverse cooperation with Russian researchers in Russia. Some of the challenges mentioned above can be handled by taking this sometimes time consuming issues into account in the planning process of the projects.

The Russian research community can in many sectors provide an alternative view on political and social sciences, in several disciplines within the natural sciences the Russian research has for many years been at the front. Scientific cooperation can also enhance the industrial cooperation, as research institutions work together with companies on innovation, creating access to new markets at the same time.

The research communities should also be encouraged to establish international research clusters in order to be able to answer to strategic and important research topics in an efficient manner, using each other's strength and form robust organisations able to share information within and with the greater society. This would also enhance a greater mobility of researchers / students and give strength to the project management and implementation.

Research topics

Common research topics cannot be pin-pointed as absolutes. The research community should be free to study the knowledge gaps within all sciences and find technology and product solutions as natural part of the economical, technological, social and political developments.

When defining the topics for common research activities with Russia, on should also take into consideration the available co-funding on the Russian side in order to facilitate the participation of the Russian researchers.

3.2 Action points / Instruments

a) Knowledge / Sharing of information

Knowledge management is fundamentally about making the right knowledge or the right knowledge source (including people) available to the right people at the right time.

To refrase the words of the Interreg Europe: "The world is full of brilliant ideas." They come from different regions and improve life in them. Not all regions have access to those ideas though. We will share the ideas and good practice within the Europe/Russia research. We believe it makes sense when you pool resources and learn from each other when looking for solutions to your regional development challenges.

We suggest to do this using the best practice, knowledge and new technology developed through the last years of multilateral cooperation.

Suggestions:

- Ensuring the flow of information from and towards funding agencies about using synergies between MS/AC and EU Commission's funding instruments (what are the strategies, interests of EU Commission and MS/AC?) (=policy level);
- Ensuring that relevant stakeholders (funding agencies, research and innovation actors, etc.) receive sufficient and up-to date knowledge about bi- and multilateral instruments and initiatives (=level of practical cooperation). Including short-term stay of specialist between the agencies;
- Make use of social media and new ways of using digital media, web tools and smartphones in the context of knowledge and information
    - Make us of and engage the 7th Framwork programme project "learning layers, to make a knowledge sharing/learning cluster on EU/Russia Research; (http://learning-layers.eu/project-overview)
    - Establish a website with thematic web-library on the MS/AC Russia Research with reports, publications, stories of best practice in organization of research, funding, conferences. Included intranet solutions for MS/AC and partner agencies.

b) Improving framework conditions for EU-Russian STI cooperation

- Information gathering about improvement of framework conditions
- Data access
- What could be a future mutual (European-Russian) benefit of the high potential for innovation in Russia?
- Sustain a constructive STI policy dialogue with Russia, especially in the legal fields concerning IPR
- Create a common database of perspectives projects.

c) Enhancing brain circulation

Brain drain can be described as permanent emigration of intellectuals, knowledge workers, and high skilled specialists engaged in research and information science, as well as potential specialists (students, post-graduate students, trainees). Brain drain has been debated in Russia among the science community and science administration since the early 1990s when the Russian science was affected negatively by a wave of emigrating researchers.

Brain drain has been noticeable in almost all scientific disciplines, but mostly in the field of space technology, applied and theoretical physics, computational technologies, biochemistry, microbiology, genetics, mathematics and programming. Brain drain or even outgoing researcher mobility is often seen as a worrying phenomenon in Russia.

The solution to the problem is to transform brain drain into brain circulation. It is necessary first to eliminate the pusher factors that create large scale scientific emigration, and to create perspective, competitive and inviting conditions for scientists to work in Russia. It is also necessary to create programmes that will enhance better outwards mobility of Russian researchers (and students) but also secure their return back to Russia. In the same time Russia must become more attractive and easier accessible target for researchers from EU member countries.

Russia is already taking measures to enhance brain circulation.

The governmental programme of the Russian Federation "Development of Science and Technology in 2013-2020" includes several measures that will improve the status of research and enhance mobility. The goal of the programme is to form a competitive and effective R&D sector and ensure its leading role in the process of technological modernisation of the Russian economy.

At the first stage it is planned to improve the system of the state science funding and regulation in the sphere, raise effectiveness of research organizations. The second stage, 2014-2017, aims to increase quality of work of the research institutions, make salaries in the sector more competitive, introduce new form of support of individual R&D work (grants), and construct mega-science installations. The third stage, 2018-2020, aims at sustaining results of the previous two stages and broadening the programme scale.

The governmental programme targets also to promote international projects and execution of international agreements in the sector. At the same time the Ministry of Education and Science of the Russian Federation has taken the initiative to engage scientists from abroad.

The renewed Education Act and the reorganization of the Russian Academy of Sciences may also open many opportunities. Higher education institutions have research as a task more prominently than before. The ambitious goal is to put five Russian universities in the list of the 100 best universities of the world.

Russia is also a participant of European Higher Education Area and could make more profit out of their membership by implementing the Bachelor-Master structure and the European Credit Transfer and Accumulation (ECTS) system.

Measures suggested: Complementarity

Exchange of both students and scientists: EU Member States and the Russian Federation have potential approaches to be utilized in order to enhance both student and academic personnel exchange. This holds both for short term mobility activities and degree programmes as well as digitalized collaborative actions.

New mobility programmes could be one way to enhance researcher mobility to Russia. Mobility programmes should be opened both in Russia and in EU member states and associated countries to support incoming and outgoing researcher mobility.

When enhancing collaboration, existing multilateral and bilateral programmes and actions should be taken into account. For example, BILAT RUS project has identified barriers and given recommendations to address the mobility of researchers between EU countries, AC and Russia (Enhancing the bilateral S&T Partnership with the Russian Federation (BILAT RUS Deliverable 2.3).

To conclude: brain circulation should focus on the improvement of mobility conditions for EU experts to Russia, especially in the fields of industry and innovation.

d) Funding cooperation

Funding cooperation is a key measure for deepening research and innovation links between the EU and Russia. It offers practical instruments for researchers and innovators to intensify their joint work and mobility. A strong basis of funding instruments at bilateral as well as multilateral level is available.

Bilateral S&T Cooperation between EU MS/AC and Russia
Analyses performed in the ERA.Net RUS and BILAT-RUS-Advanced projects[2] have provided a sound basis for understanding the range of EU countries cooperating substantially with Russia at the bilateral level, and the solid scale of cooperation in terms of projects and budgets. The most common instruments in order of relevance are support for mobility, funding of research projects, implementation of joint funding programmes, and dissemination of results. According to stakeholders from the EU and Russia, the bilateral programmes have an important role in providing funding complementary to EU programmes, and as so-called "springboards" to EU funded projects. Bilateral projects are usually of smaller scale than multilateral ones, and have less comprehensive application procedures; they are therefore more easily accessible for scientists who have little experience in international projects.

Horizon 2020 and Russia
EU-Russia cooperation in research and innovation has a long tradition, also within the framework programmes. The EU Framework Programme for Research and Innovation „Horizon 2020" is open to participation from across the world, but countries such as the emerging economies (Brazil, **Russia**, India, China, Mexico) and industrialized countries (USA, Canada, Japan, South Korea, Australia, …) do not receive automatic funding by the EU. In exceptional circumstances, Russian institutions can receive EU funding if:

- Russia as a country is explicitly identified in the relevant work programme and call for proposal as being eligible for funding
- their participation is deemed by the European Commission to be essential for carrying out the action.

[2] See: http://www.eranet-rus.eu/_media/D_1.3_Analytical_Report_3.pdf

However, the statistics published by the European Commission concerning 112 Horizon 2020 calls (e-Corda database) show a significant drop of participation of Russia in Horizon 2020 compared to the 7the Framework Programme (Fig. 1 and Fig. 2).

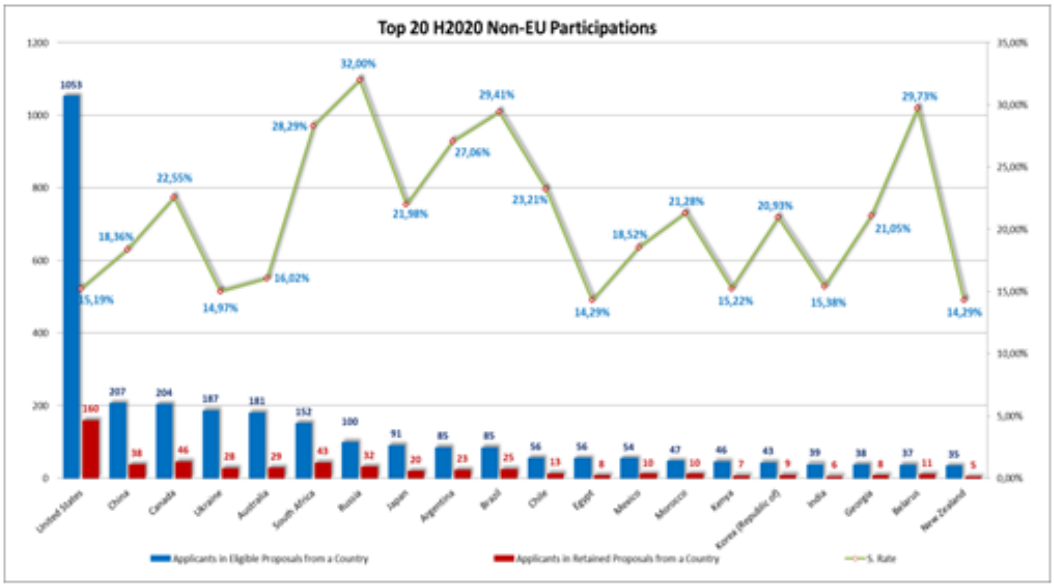

Fig. 1. Top 20 Horizon 2020 Third country Participations (source: KPK)

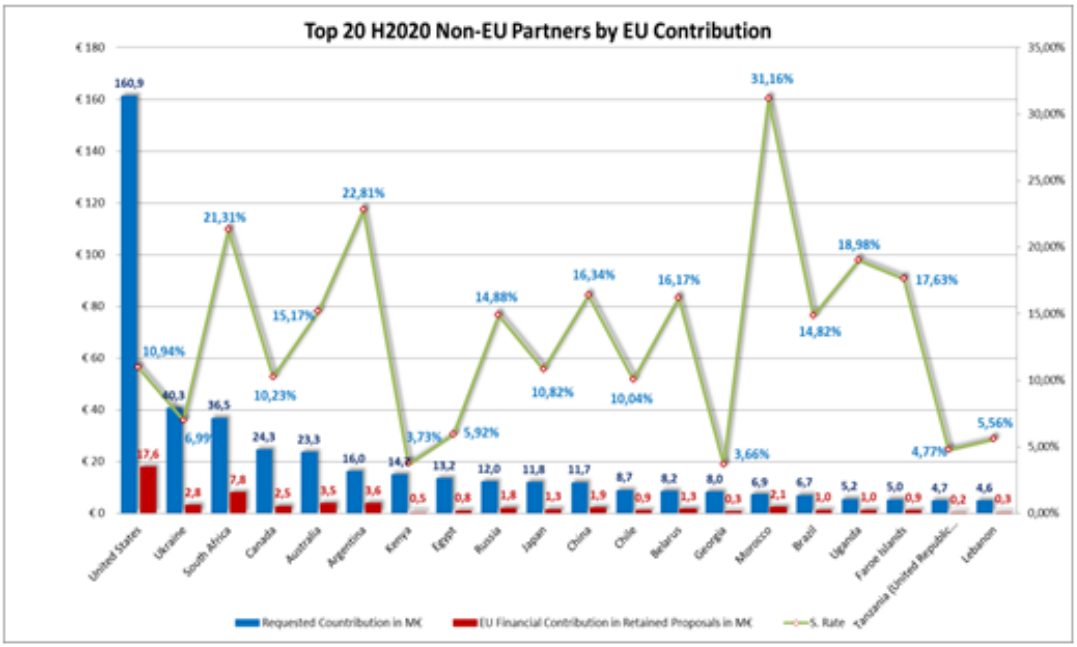

Fig. 2. Top 20 Horizon 2020 Third country Partners by EU contribution (source: KPK)

The main reason for this situation is that Russian institutions do not receive automatic funding by the EC. In this context the Ministry of Education and Science of the Russia Federation (MON) worked out a national financial support scheme for Russian participants of the EU framework programme “Horizon 2020” in various areas.

The mechanism is financed by the Russian Federal Targeted Programme (FTP) «R&D in Priority Areas of Development of the Russian S&T Complex 2014-2020», Section 2.2 «Members states cooperation research support»[3].

The ERA-NET instrument

An efficient tool for integrating Russia into the European Research Area (ERA) has been the multilateral ERA-NET mechanism, and Russia has used this mechanism more efficiently than other Third Countries. In order to expand the multilateral activities between the EU and Russia such ERA-NETs have been proven to be a concrete and essential element to further deepen the ERA.

In first place the **regional ERA-NETs**, **the ERA.Net RUS** and the **ERA.Net RUS Plus**[4] initiatives need to be mentioned here. In both ERA-NETs joint calls for research and innovation projects were implemented. The recent call in the ERA.Net RUS Plus was highly successful: 18 projects for 'Innovation' and 45 projects for 'Science & Technology' were selected for funding in mid-2015. A substantial financial volume of € 20 million was invested, which included a topping-up from the EU of € 3.5 million. There has also been considerable progress in developing common standards in cooperation and in integrating national scientific, management and financial spheres between the partners. Given this success, the Group of Funding Parties (GFP) of the ERA.Net RUS Plus is exploring opportunities for follow-up funding activities. The most promising and concrete option will be a '2nd joint call' for proposals within the current ERA.Net RUS Plus (running until October 2018). Exploratory talks with funding parties have shown a high interest in implementing this option. A smart planning and sharing of the administrative cost will be needed for this approach. Other follow-up options for funding cooperation will be explored as well, and they include a comprehensive cooperation according to Article 185 TFEU, a longer term joint funding initiative among interested funding parties (without funding from the EU), and a joint research and innovation fund.

So-called **thematic ERA-NETs** have also been well used for funding cooperation. In particular the Russian innovation fund FASIE and the fundamental research fund RFBR participate in thematic ERA-NETs, which include M-ERA.NET (materials science and engineering), IRA-SME (innovation projects and SMEs), EUROTRANSBIO, ERA-IB (Towards an ERA in Industrial Biotechnology), BONUS (Baltic Sea Science–Network of Funding Agencies), ERASysBio (Towards a European Research Area for Systems Biology), EUROPOLAR (The Strategic Coordination and Networking of European Polar RTD Programmes), ASPERA 2 (ERA.Net on Astroparticle Physics), EUPHRESCO 2 (European Phytosanitary Research Coordination 2).

Valuable experience has thus been gained on the possibilities of Russian funding agencies to participate in this type of European schemes, which involve co-funding and implementation of joint research initiatives at programme level. This demonstrates the overall trend of moving towards a EU-Russia partnership between equals, based on sharing funds and responsibilities. This fosters the coherence and Europe-wide coordination of national and international S&T programmes with Russia.

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[3] http://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020_localsupp_russia_en.pdf http://www.eu-russia-yearofscience.eu/_media/12_Burger_Kuklina.pdf

[4] See: http://www.eranet-rus.eu/

Other multilateral networks

Several other multilateral support networks for research and innovation play an increasing role in European and national research activities: EUREKA, COST, Article 185 Initiatives, Joint Programming Initiatives (JPI), European Technology Platforms (ETP), Joint Technology Initiatives (JTI), SET-Plan, European Institute of Technology, Public-Private Partnerships Initiatives, European Innovation Partnerships, FET Flagship Initiatives, Knowledge and Innovation Communities.

Russian scientists participate in projects of the intergovernmental organizations **EUREKA and COST**. Russia is member of the EUREKA network for innovation support since 1993, but participation of Russian organisations is in comparison to the duration of its involvement rather low. The reason for this situation is lack of funding for Russian participants in EUREKA projects and frequent changes of responsibilities for EUREKA in Russia. Initiatives according to **Article 185 TFEU** are comprehensive funding programmes with a substantial funding participation of the EU. Russia has been involved in the Article 185 initiative BONUS, a joint Baltic Sea research and development programme (2010-2017). BONUS shows the potential of ERA-NETs to evolve into institutionalised and substantial funding programmes; it is based on an ERA-NET (FP6), and an ERA.Net Plus (FP7). Russian participants in BONUS projects have been funded through the Russian Foundation for Basic Research (RFBR). Other successful ERA-NETs such as the ERA.Net RUS Plus should continue the trend to establish Article 185 activities and to foster a more joint programmatic approach between the EU and Russia. Efforts have also been made to involve Russian actors into **Joint Programming Initiatives** and for establishing contacts among **Russian and EU Technology Platforms**.

Recommendations/Measures

- Bilateral funding schemes provide important support to researchers and need to be continued.
- Russian participation in H2020 should be enhanced and measures be taken in this respect: Russian NCPs need to support and inform their researchers and innovators on the opportunities under H2020, and the Russian co-funding mechanisms for supporting joint activities should be further developed.
- A concrete and immediate measure for advancing the cooperation and to harmonize and to synchronize the various funding procedures as far as possible, the Working Group endorses a 2nd round of calls for research and innovation projects (tentatively to be implemented in 2016-2017) in the highly successful ERA.Net RUS Plus framework.
- The potential for a large joint funding initiative according to Article 185 TFEU should be explored. A task force comprising relevant experts from the EU and Russia should be established to advance the first steps on this cooperation and to exploit the political interest in such a long-term measure.
- A permanent platform of Funding Parties interested in research and innovation cooperation between the EU and Russia should be established. The platform should prepare adequate follow-up funding programmes to the ERA.Net RUS Plus with or without financial support from the EU. Such a platform should be launched on the basis of the current ERA.Net RUS Plus project.
- The successful involvement of Russia in thematic ERA-NETs should be continued and further expanded under H2020. Another regional ERA-NET cooperation with Russia should be considered, in case the Article 185 cooperation cannot be realised.

- The interest of the Russian government in EUREKA should be reinforced, and activities of Russian innovation actors with EU partners herewith be fostered.
- Cooperation should also be intensified in other forums for funding of joint research and innovation activities, such as COST, Joint Programming and Technology Initiatives. Furthermore the Russian Technology Platforms should develop closer links with the EU innovation platforms (ETPs, KICs…).

e) Making Europe more visible in Russia

Cooperation in the areas of science and research is one of the cornerstones of EU-Russian relations, as reflected by the EU-Russian Year of Education 2014. In addition to this year of science, an EU campaign "Making Europe visible" in Russia can contribute to a common European approaches of marketing Europe's potential for STI cooperation (e.g. via Destination Europe). Its aim will be to draw even more attention in Russia to EU countries as a key location for innovation and to make use of synergetic effects at the same time. This activity could be started as a tool to reactivate the cooperation between the EU MS/AC and Russia after abrogate the EU sanctions.

With this country-specific campaign the EU MS will cast themselves as attractive partners in education, research and innovation. The key thematic fields will be defined among the EU MS in regard of the Russian priorities. The planned activities will support the initiation of teaming agreements between Russian research institutions and innovative businesses and partners from the EU MS, building up cooperation in the area of training of skilled staff, and creating incentives for (even more) knowledge-intensive exchanges between the Russia and the EU.

In order to achieve these goals, ministries from interested EU MS/AC (e.g. Education and Research or Economics) as well as the EU Commission should assist and support European research institutions and SMEs in heightening their presence and visibility in Russia (e.g. mobility funding). A network approach could be chosen to provide an equal platform to both research and innovation. The EU MS/AC/COM will also organize multilateral events (e.g. Information Days, Brokerage Events etc.) with the aim to support the joint EU-RUS participation in H2020, other EU and bilateral programs. The planned events could be supported by the planned "Service Facility", funded by the COM.

The Russian side (e.g. MON) will be tightly involved in the conceptual phase and even better, it should rather convince the Russian stakeholders of Europe's attractive strengths in the field of STI cooperation.

f) Cooperation in the field of Research infrastructures

Russia is a partner in the Large Hadron Collider (LHC) collaboration with CERN, the European particle-physics laboratory near Geneva, Switzerland, and contributes to several major research facilities under construction. These include the European X-ray Free Electron Laser (XFEL) in Hamburg, Germany; the Facility for Antiproton and Ion Research (FAIR) in Darmstadt, Germany; and ITER, the experimental nuclear-fusion reactor in Cadarache, France. Moreover, the Russian Federation now participates in the operation of the European Synchrotron Radiation Facility, an international consortium in Grenoble, France. The country annually allocates significant financial resources to these projects and the cooperation with the EU MS in these areas retrieves a huge potential. The experience, gained in these ambitious joint initiatives should be used in smaller-scale projects, at multilateral as well as bilateral level.

A first step in this direction is the collaboration with the six Russian mega-science projects[5]. After scientific assessment, some of these mega-science projects could become a platform for further development of cooperation in addition to the EU-Russia priority areas of cooperation.

The first measure on further internationalization of the projects has been made 2015. With the aim to foster scientific cooperation between the Russian Federation and the European Union in the development and scientific exploitation of large-scale research infrastructures an EU funded project CREMLIN has started its activities in summer 2015. It has been triggered by the mega-science projects initiative launched by and in the Russian Federation which is now very actively seeking European integration. The proposed mega-science facilities have an enormous potential for the international scientific communities and represent a unique opportunity for the EU to engage in a strong collaborative framework with the Russian Federation. The CREMLIN project is a first and path finding step to identify, build and enhance scientific cooperation and strong enduring networks between European research infrastructures and the corresponding mega-science facilities to maximize scientific returns. It follows the specific recommendations of an Expert Group from 8 EU MS experts by devising concrete coordination and support measures for each mega-science facility and by developing common best practice and policies on internationalization and opening.

Based on the CREMLIN experience, further EU MS-driven initiatives, e.g. within the frame of the European Strategy Forum on Research Infrastructures (ESFRI), should be contemplated in near future. Targeted funding instruments for institutional collaboration between the EU and Russia after Competitiveness Council approval could support primary the development of scientific collaboration in this direction.

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[5] http://www.icri2014.eu/sites/default/files/presentations/Sergey%20SALIKHOV.pdf