

**EUROPEAN COMMUNITY-RUSSIA SCIENTIFIC AND
TECHNOLOGICAL COOPERATION**

**A ROADMAP FOR ACTION
2009-2011**

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Introduction

The EU has for the past 15 years had a very rich scientific and technological relationship with Russia, both on the level of the individual member states and on the level of the European Community.

In addition to the sectoral *Agreement on Scientific & Technological Cooperation* between the EC and Russia, there are also cooperation agreements with Russia on nuclear safety and on nuclear fusion, as well as several other EU, pan-European, and international S&T programmes with or involving Russia, such as ITER, ISTC, ISS, Tacis, Eureka, CERN.

The European Union and Russia have entered into a political commitment to create a 'Common Space in Research & Education, including Cultural Matters' (the 4th Common Space).

In FP5, FP6 and in FP7 to date, Russia has been the most successful, non-associated, third-country partner in the activities of the EC Research Framework Programmes, both in terms of the total number of participations and in terms of the total amount of financial contributions received from the EC.

Under the 6th Framework Programme, which ran from 2002 until 2006, over 450 Russian research organisations received a total of nearly 50 million euro of EC funding for participation in some 309 research projects (excluding projects under INTAS) worth a total of almost 1.4 billion euro.

In the current 7th Framework Programme the involvement of Russian research groups continues to be very strong. To date, following the conclusion of the first two years of calls for proposals, some 235 Russian research organisations are involved in 136 successful projects, receiving some 29 million euro of EC contribution.

The creation of permanent joint European Commission-Russia research working groups, under the Science and Technology Cooperation Agreements in essentially all the thematic priorities of the Framework Programme has been a substantial step towards more common research agendas and increasingly common decision-shaping processes between the EC and Russia.

One of the outcomes of the discussions in these thematic groups has been the establishment of a number of 'coordinated calls'. These are parallel research calls published by both the EC and Russia with common research content and a requirement that research teams on both sides that wish to collaborate, establish links and submit separate but complementary proposals to the EC and to the Russian funding agency involved. To date, five such calls have taken place in key thematic areas: health research, biotechnology, nuclear fission, nanotechnology and energy research. A new coordinated call with Russia in aeronautics and air transport is planned for this summer.

These co-funded activities demonstrate that in the EC S&T cooperation with Russia is moving towards a partnership between equals based on sharing funds and responsibilities.

So, what does the future hold in terms of a closer cooperation in Science and Technology?

The following sections set out the main achievements to date, and plans for future EC-Russia cooperative activities in the principal areas of the Framework Programmes.

Theme/area: HEALTH

Recent concrete achievements

Under FP6, Russia participated in 28 projects, second place behind China and before USA with regard to the number of participations. This represents 13 per cent of all international participations. The EC financial transfer to the Russian laboratories amounts to EUR 5.36 million.

During 2006 to 2009 a number of meetings between Russian and EC officials took place and a joint Russia-EC permanent working Group on Life Sciences, Genomics and Health was created and to date met five times in Brussels, Moscow and St. Petersburg.

At a workshop in St. Petersburg in September 2007, Russia and the EC considered topics to be included in the third call for proposals on comparative population genetic studies on common diseases; molecular mechanisms of diabetic and weight-related heart disease; developing new and improving existing mathematical algorithms to tackle the challenges of systems biology and neurobiology of proprioception. In the future, other topics may be considered for coordinated initiatives by the EU and Russia.

Following an in-depth dialogue within the working Group on Health, two of these suggestions '*Comparative population genetic studies on multifactorial diseases*' and '*Mechanisms of diabetic and weight related co-morbidity in heart failure*', were incorporated in the work programme for budget year 2009. The call was announced at a workshop in Moscow in early September 2008.

In the first call for proposals in FP7, Russia has 34 participations in proposals out of a total of 266 from non-associated third countries. Russia was the second most represented non-associated third country, behind the USA and before China. Six proposals were successful, representing 10 per cent of the total number of successful non-associated 3rd countries. The commitments foreseen for these six partners from Russia amounts to EUR 1.36 million.

For the second call, with a deadline in September 2007, there were two Specific International Cooperation Actions (SICA) topics with focus on Russia and other Eastern Europe and Central Asian countries (EECA) countries: one on 'Childhood and adolescent mental disorders' and the other on 'Epidemiological investigations into long term trends of population health as a consequence of socio-economic transitions, including life-style induced health problems'. Several other SICA topics did not identify individual countries or regions, but were open to all International Cooperation Partner Countries (ICPC) countries, including Russia (as for the rest of the topics). Thirty-seven Russian participants were part of submitted proposals, out of 816 international partners, with 7 successful out of 175. The commitments foreseen for these seven partners from Russia amounts to EUR 1.22 million.

In the third call, part of which is still under evaluation at the time of the writing of this note, there were 38 Russian participants in 24 different proposals of the single stage call (two stage call is still being evaluated). Of these, 10 participants in two proposals were successful. These were both in the coordinated topics with Russia. There is no budget foreseen for transfer to the Russian participants as these will be covered by the Russian authorities, but a small amount of the European coordinators budgets can be used to pay for expenses related to the cooperation.

Suggestions for new initiatives

Russia and the EC see coordinated topics as a step in the direction of a more balanced cooperation partnership in Health, above the already open invitation for participation in all topics and specific SICAs. This is appropriate for selected topics where Russia and the EC have a particular bilateral interest in cooperating. The Russian side will contribute financially to the participation of their researchers. For future calls, a simplified version of collaboration has been discussed, where parallel calls by the EC and Russian will be open for independent projects which will be required to work closely together, as opposed to the combined (nearly identical) proposals that were submitted to the 2008 calls. This will simplify the management of the calls and evaluations but a strong interest is still expressed for cooperation in the form of exchanges of evaluators etc. The important issue is to identify together the topics for support and to synchronise the time of the start of the projects.

In the upcoming fourth work programme and 2010 calls for FP7 Health proposals there is one topic with such a modified coordination with Russia. This is a SICA topic on Mathematical Modelling for Systems Biology and has an indicative maximum budget of EUR 3 million. The proposers will be required to collaborate closely with an individual project(s) funded on the Russian side and to set aside a part of the budget to cover the costs of this cooperation. As this is a SICA topic with a target region of EECA countries, some Russian labs could be funded also directly through the EC project budget, and perhaps more importantly, labs from other countries in the region could participate.

A sixth meeting of the Health Working Group will be held in Brussels on the 29th of June with discussion on the upcoming and future calls. For the autumn, in September the kick-off meeting of the two projects resulting from the 2008 call will take place in Berlin; a workshop with scientists in Siberia, organised by the Russians has also been suggested for October 2009 (title to be determined).

The issue of dissemination of information on the possibilities offered by the Health theme, both on the Russian side and in the EU (with regard to Russian participation) should be reinforced.

The Russian NCP for Health will take a proactive role in organising events and contacts both for publicising the theme and for structuring future activities.

Theme/area: FOOD, AGRICULTURE, FISHERIES AND BIOTECHNOLOGY

Recent concrete achievements

Participation in FP6

In total, 12 partners from Russia participated in a total of 12 projects in the Food Quality and Safety Thematic Priority of FP6. In addition, a Russian partner was involved in one project in a related area in the Scientific Support to Policies research area. Overall, Russia had an average success rate of 19.3% and Russian partners received a total of EUR 1.3M of EC funding.

Participation in FP7

In total, 24 partners from Russia are participating in selected proposals under the first four FP7-KBBE calls (2007-2009). Russia ranks second amongst all third countries successfully participating in projects in this Theme. The overall success rate for Russia under the first four FP7-KBBE calls is of 18.75%.

In total, 128 partners from Russia participated in submitted proposals under the first four calls in FP7, with a high participation in Call 2B, under which the EU-Russia co-ordinated call in Biotechnologies was carried out, with the selection of two co-funded projects. In the first three calls, Russia ranked amongst the top five third countries, and was the first ranked third country in the first two years of this programme. Russian participants succeeded well not only in SICA topics, but also in topics targeted for international cooperation and in other, general, topics. However, after a remarkable success in 2008, the participation of Russia decreased significantly in 2009 (one selected partner, with success rate of ca 6%).

The coordinated call with Russia has been successfully implemented. The evaluation of the proposals received was carried out with the participation of Russian experts and led to the selection of two proposals (one per topic). The 'Plant Production of Vaccines' project involves four Russian partners (Centre Bioengineering of the Russian Academy of Sciences; Faculty of Biology, Moscow State University; Research Institute of Influenza, Russian Academy of Medical Science; FGI Federal Centre for Animal Health), and the project 'In Silico Rational Engineering of Novel Enzymes' involves five Russian partners (Belozersky Institute of Physicochemical Biology; Petersburg Nuclear Physics Institute, Russian Academy of Sciences; Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences; Molecular Technology Ltd.; and Bio Technologies Innovations Researches Ltd.). These projects started in 2008-2009 with co-funding from the EC and FASI.

Ongoing or planned activities

Joint Events

The following joint events have been organised since 2006:

- *German-Russian Forum Biotechnology*, Novosibirsk, 15-16 June 2009
- *VEU-RUSSIA Symposium on Biotechnology, Puschino* (Russia) 1st-3rd October 2008

co-organised by RTD-E and the RF bioNCP (Bakh Institute) and the Federal Agency for Science and Innovation

- *Info Day on EU-RU coordinated call*, Moscow, 12 December 2007

- *IV EU-RUSSIA Symposium on Biotechnology*, Suzdal (Russia), 31 Aug- 1 Sept 2007
co-organised by RTD-E and the RF bioNCP (Bakh Institute) and the Russia Federal Agency for Science and Innovation

- *III EU-RUSSIA Symposium on Biotechnology*, St Petersburg (Russia), 6-8 June 2006
co-organised by RTD-E and the RF bioNCP (Bakh Institute) and the Russia Federal Agency for Science and Innovation

- *Bio NCP meetings*, targeting Third Countries (BioNCP from Russia attended regularly these meetings since 2004) - last meetings: October 2008 in Brussels and May 2009 in Rome (via the BIOCIRCLE project).

The EU-Russia Working Group on Agro-Bio-Food

Established in 2006 between the EC-RTD-E and FASI, under the umbrella of the EC-Russia S&T bilateral agreement, the EU-Russia Working Group on Agro-Bio-Food has been very active, with the help of the RF BioNCP (<http://fp7-bio.ru/en/>), in organising joint activities, including novel mechanisms for collaboration and new structures for dialogue, such as:

- the first EU-Russia co-ordinated call for proposals in biotechnology (2007);
- the creation of 6 RF Technology Platforms mirroring the European Technology Platforms (ETP), respectively in the areas of Industrial Biotechnology, Food, Plants, Animal Health, Forestry and Fisheries . These RF Technology Platforms have not only contributed to shaping national but also to dialogues with their European counterparts – the ETPs – to jointly define EU-Russia research agenda in these areas.;
- yearly EU-Russia Symposia on Biotechnology since 2005

The working group meets on a regular basis: the last meeting was held in Puschino, on 3 Oct 2008. Following the conclusions of this last meeting and of the EU-Russia Symposium held in Puschino in Oct 2008, an EU-Russia partnership initiative in Plants and Microbes Biodiversity is planned in the 2010 work programme.

Technology Platforms and ERA-NETs

Encounters between the Technology Platforms from the EU and the RF continue to be held, mainly via the EU-Russia Symposia on Biotechnology, but also via their own events. During the last Symposium in October 2008, also some ERA NETs have been invited to participate and have started establishing links with the related RF programmes.

The seven RF Technology Platforms established to mirror the KBBE ETPs continue to discuss with their EU counterparts (for example: regular meetings of Forestry Technology Platforms).

Links have been established between some KBBE ERA-Nets and the corresponding RF programmes: for instance the ERA-NET on industrial biotechnology have invited the representatives of the RF TP on industrial biotechnology to attend their meetings.

BioNCP network:

Since 2004, Russia has a very active BioNCP (Bakh Institute) with whom several joint initiatives have been carried out, under the aegis of the EU-Russia working group on Agro-Bio-Food (see above).

The RU BioNCP has received support from this theme, starting from FP6 (SSA: In Joy and Train) up to FP7, via the funding of the CSA BIOCIRCLE - to support the Network of third countries BioNCPs, including RU (recent/planned meeting: Rome in May 2009 and brokerage event in Brussels in October 2009).

Suggestions for new initiatives

The main call in the 2010 work programme (FP7-KBBE-2010-4) is planned to be for *ca* 190M and includes 47 topics, with 15 SICA and three other topics encouraging international cooperation, several of which require the participation of EECA and/or Russian partners. These include:

- A coordination action specifically targeting Russia as an EU-Russia partnership initiative to co-ordinate EU and RF research programmes on Microbes – Plants Biodiversities;
- A topic with mandatory participation of Black Sea countries (Georgia, Ukraine, Russia) on fisheries;
- Two coordination actions, as global initiatives respectively on abiotic stress tolerance and animal health are encouraging, among others, the participation of Russia; and
- The participation of Russia and Ukraine as countries with bilateral agreements with the EC is expected in the topic for a Network of Third countries bio-NCPs (part two).

In terms of next steps, discussion is ongoing within the Working Group on Agro-Bio-Food; the next meeting of the group is planned for September 2009.

A joint event is planned in Moscow for November 2009. It will consist of an information day, and also a meeting of the KBBE ERA-NETs (e.g. industrial biotechnology) with RF counterparts.

In conclusion, the way forward for RU-Russia cooperation in theme of Food, Agriculture, Fisheries and Biotechnology will be through moving to activities of systematic collaboration at programme level, via new concepts such as the 'partnership initiative', the 'global initiatives' and ERA-NET linked activities.

Theme/area: INFORMATION AND COMMUNICATION TECHNOLOGIES

Recent concrete achievements and ongoing or planned activities

Over the last three years DG INFSO has put significant effort to improve Russian participation in the FP7-ICT Theme. Three Information and Brokerage Events have been organised in Russia in cooperation with the FP7-ICT contact point and relevant local Authorities, namely,

1. Information and Networking Event on FP7-ICT Theme, St Petersburg, 29 May 2009
2. Information and Brokerage Conference on FP7-ICT Theme, Moscow, 21-23 October 2008
3. EU-Russia Stakeholders Meeting on Components and Systems, Moscow, 25-26 September 2007

This attracted considerable interest both from EU and Russia stakeholders and Russia's success rate has steadily improved during the FP7-ICT Calls 1-3, rising from 5.3% in Call 1, to 9.8% in Call 2, and 11.1% in Call 3. Russian partners participated in 40 projects in FP6 and nine so far in FP7 calls 1-3. Funding awarded from these projects amounts, in FP6, to EUR 4.9M and, in FP7, to EUR 1.7M. The Event of 21-23 October 2008 in Moscow was extensive and included workshops covering a) Nanoelectronics, b) Micro-nano Systems, c) Embedded Systems, Computing and Control, d) Photonics e) ICT for Transport and f) Future and Emerging Technologies.

There are five international cooperation support actions supporting EU-Russia cooperation in ICT:

- **NESTER** (www.nester-ru.eu) works to identify collaboration priorities and set-up EU-RU partnerships in the field of Networked Embedded and Control Systems (April 2006-August 2008);
- **ISTOK** (www.istok-ru.eu/) identifies constituencies and opportunities for strategic EU-Russia cooperation in OCT (December 2006 – August 2008), followed by **ISTOK-SOYUZ** (January 2009 – June 2011);
- **RECI** aims to increase the participation of Russian researchers in the FP6 IST-Priority (July 2005 to December 2007);
- **SITE** aims to increase cooperation between EU and Russian researchers in the FP6 IST-Priority (July 2004 to December 2006); and
- **ADMIRE-P**, a dense multi-level network for ICT research cooperation between the EU and the Privolzhsky Federal District in FP5 (November 2002 – April 2005).

Suggestions for new initiatives

During the conference of October 2008 A. Peltomäki, Deputy Director-General, DG INFSO, met with A.V. Khlunov, Deputy Minister, Ministry of Education and Science of the Russian Federation and proposed that a new working group on ICT could be set up under the S&T Cooperation Agreement. At the joint EC-Russia S&T Committee of 30 June 2009, it was agreed to establish a joint EC-Russia working group on ICT research. It is intended that the first meeting of the group will take place in the autumn of 2009, to discuss new ways of cooperation, potentially through coordinated calls and other joint initiatives.

Internal discussion within DG INFSO has led to the identification of specific topics for more intensive cooperation in the following areas:

- a) Nanoelectronics (advanced integrated Si and non-Si devices and processes for reliable communication and digital and non-digital computing systems, design, manufacturing of integrated circuits and sub-systems);
- b) Micro-nano Systems (N/MEMEs and their manufacturing, Microsystems technologies based on piezoelectric, Si microcantilevers surface acoustic waves and membrane resonators for microwave components;
- c) Embedded Systems, Computing and Control (Embedded Systems design – formal verification and rapid prototyping of human-machine interfaces in safety-critical applications, Computing – parallelisation and optimising compilation of High Performance Computing applications in one of the areas of energy, biology or earth sciences, Control – Modelling and control of complex dynamic systems, addressing novel methods and tools for the optimal and robust behaviour as well as cooperation and synchronisation of systems in particular of distributed and networked nature;
- d) Photonics (ultra short pulse lasers, novel optical fibres, novel high power laser diodes, nanostructured materials for optical applications);
- e) Future and Emerging Technologies (quantum information and/or molecular scale devices);
- f) Virtual Physiological Human;
- g) Database management systems; and
- h) Internet technologies.

Such a working group could discuss these and other research areas of mutual interest, the respective budgets and modalities for cooperation, in view of potentially developing a joint call in the 2011-2012 work programme.

An information day on the FP7 ICT Theme will take place in Moscow on 2 October 2009.

Theme/area: NANOSCIENCES, NANOTECHNOLOGIES, MATERIALS AND NEW PRODUCTION TECHNOLOGIES
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Recent concrete achievements

The EC-Russia Working Group on Nanotechnology (WG Nano) was established in 2007 to reinforce cooperation with a view of creating an EU-Russia common space of research and education. It was then agreed to work towards establishing common research activities in the area of nanosensors, nanomembranes, computational nanomaterials science, nanophotonics and spintronics. The last meeting of the nano working group took place in Moscow during the Rusnano conference in December 2008, with the presence of Mr. Von Bose and Mr. Tokamanis from NMP, confirming the interest to launch a coordinated call on nano-sensors, together with a mapping of Russian nano-technology and infrastructure.

Under FP7 (calls 2007 and 2008), 22 Russian partners have been involved in 14 funded projects, as follows:

- ICPCNanonet 'A web-based repository of nanoscience and nanotechnology publications, database of researchers and online forum to inform and facilitate networking between EC and ICPC RTD' (one partner);
- ECONAM 'Electromagnetic characterisation of nanostructured materials' (one partner);
- MAGISTER 'Magnetic scaffolds for in vivo tissue engineering' (one partner);
- PARTICOAT 'New multipurpose coating systems based on novel particle technology for extreme environments at high temperatures' (one partner);
- NANOINTERFACE 'Knowledge-based multi-scale modelling of metal-oxide-polymer interface behaviour for micro- and nanoelectronics' (one partner);
- IRIS 'Integrated European industrial risk reduction system' (one partner);
- SONO 'A pilot line of antibacterial and antifungal medical textiles based on sonochemical process' (one partner);
- NEPHH 'Nanomaterials-related environmental pollution and health hazards throughout their life cycle' (one partner);
- DoubleNanoMem 'Nanocomposite and nanostructured polymeric membranes for gas and vapour separations' (two partners);
- SELFMEM 'Self-assembled polymer membranes' (one partner);
- POLYZION 'Fast rechargeable zinc-polymer battery based on ionic liquids' (one partner);
- MEMBRIDGE 'Bridge between environment and industry designed by membrane technology' (eight partners);
- NMPTeam 'Improving the services of the NMP NCP Network through trans-national activities' (one partner);
- OCMOL 'Oxidative coupling of methane followed by oligomerisation to liquids' (one partner)

Russia has participated in the 3rd meeting of the International Dialogue for Responsible Nanotechnology, which took place in Brussels in March 2008.

Ongoing or planned activities

An EU-Russia coordinated call was included in the 2009 work programme closing on 31 March 2009 and evaluated from 4 May 2009. The topics of this call were the following:

(a) 4.1.2-3 Nanostructured sensors:

- 1. Optical chemical sensing with nano-particles, nano-waveguides and photonic-structures
- 2. Wireless surface acoustic wave physical sensors for operation in a wide temperature range
- 3. Sensing of toxic and explosive agents in air based on metal oxide semiconductor nano-structured materials

EUR 4.650 million financing from the FP7 and a similar amount from Russia is envisaged (1 project to be financed per sub-topic). 12 proposals were received of which 3 can be funded.

(b) 4.1.2-4 Mapping of nanotechnology and nanostructured materials research infrastructures in Russia

EUR 350,000 financing is envisaged from FP7 for this mapping exercise in Russia (CSA). 10 proposals were received of which one can be funded. The negotiation of successful proposals is ongoing with an expected start of the EU contracts before the end of the year.

Suggestions for new initiatives

Future joint activities are planned to be based on the recommendations to come from the work of the successful support action from the project 'Mapping of nanotechnology and nanostructured materials research infrastructures in Russia'.

A contract is now under negotiation with the 'NANORUCER'" consortium, consisting of FhG ISI and ISS RAS with RUSNANO having confirmed their intentions to support and contribute to the work.

NANORUCER will present its 'thesis paper on opportunities for cooperation' in project month 18, or mid 2011, but it should be possible to identify topics of joint interest such as 'Materials for energy applications in construction' for FP7 calls in 2012 or possibly 2011.

It may also be possible to identify topics of joint interest from the International Dialogue for Responsible Nanotechnology, to be identified together with the 'nanosafety cluster' operated by DG RTD unit G4.

Theme/Area: ENERGY (non-nuclear)

Recent concrete achievements

Russia has proven to be the most successful third country partner in FP7 Energy Theme: to date seven projects including 16 participants from Russia have been successful, with the Russian participants receiving approximately EUR 800,000.

Two of these projects (ICOEUR and BIOLIQUIDS CHP) are the results of the coordinated call with Russia in electricity networks management and combined heat and power generation from bioliquids (2008 work programme).

In preparation of this coordinated call, the DG Research Energy Directorate participated in a joint information day in Moscow (held on December 13 2007), specifically devoted to address two FP7 research themes: Food, Agriculture and Fisheries, and Biotechnology (FAB), and Energy. For energy, two sub-groups were organised on 'biomass' and on 'electricity' – directly relating to the topics of the coordinated call.

These projects, both began on January 1 2009, for a duration of 36 months, with EU funding of EUR 1.6 million for Bioliquids CHP and EUR 1.9 million for ICOEUR. Grant agreements for both projects have been signed and the kick-off meetings for both projects have taken place, with consortium meetings due to take place shortly: Moscow on 23-24 July for BIOLIQUIDS CHP; and Irkutsk in July for ICOEUR.

In September 2007 a Joint EU-Russia Workshop on Hydrogen/Fuel Cells took place in Moscow, with the participation of EU experts.

There has been an exchange of reviewers, with Russian evaluators taking part in the first energy call of FP7, as well as Russian evaluators assessing European proposals, and vice-versa for the coordinated call.

Ongoing or planned activities

Within the context of the International Partnership on Hydrogen Economy (IPHE), the DG Research Energy Directorate along with JRC PETTEN (JRC Chef de File) is involved in the organisation of the 2nd International Conference on Hydrogen Storage Technologies from 28-29 October 2009 in Moscow (such cooperation was previously undertaken for the 1st IPHE conference held in Lucca, Italy in 2005 which was co-organised by Italy, EC, USA and Russia.)

The Energy Theme work programme 2010 contains a number of calls which may be of interest to Russia – and this has already been communicated – in particular on Future and Emerging Technologies for Energy Applications.

Suggestions for new initiatives

Bilateral contacts are very strong and efforts should and will be made to ensure good relations are maintained with interlocutors – FASI.

Through the, now well established, EC-Russia Working Group on Energy Research (9th meeting scheduled for Irkutsk on 13 July 2009) possible next steps for cooperation are being examined.

Currently proposed, and for further discussion at the next meeting, is the idea of twinning. The area of energy efficiency is of most interest to the Russian side at present, as they are due to launch a number of projects in the area. We have informed the DG Research Directorate for Industrial Technologies of Russian interest in this area.

Twinning of projects in the areas of 2nd generation biofuels and CCS are also of interest, and the Energy Directorate in DG Research is currently examining possibilities in these areas.

As a future activity, it is possible that the BILAT-Russia project could assist in identifying suitable projects for twinning through the organisation of a themed workshop targeted at suitable projects. This proposal will be discussed at the working group meeting on 13 July.

Another avenue being explored for future Energy thematic work programmes is a support action dedicated to the exchange of researchers, which could be of relevance for future discussion.

Cooperation with Russia remains ongoing at a multilateral level through membership of the IPHE and CSLF.

Theme/Area: ENVIRONMENT (INCLUDING CLIMATE CHANGE)

Recent concrete achievements

Throughout FP6 Russia has had a significant level of participation in our research activities. Overall, 55 Russian partners participated in 32 projects, receiving a total EU contribution of EUR 5.73 million. To this amount one has to add other projects in the environment area funded by INTAS or by the international component of the FP6 which were both very active in environmental research.

Participation rates grew progressively during FP6 and the main areas of research concerned have been:

- Climate change
- The marine environment with an emphasis on the Black Sea
- Water resources and biodiversity.

In the first two calls under FP7 there were 27 partners (including one project coordinator) from Russia, requesting *ca* EUR 3.1 million in 11 successful projects. In the 2009 call, 2 partners from Russia participated in 2 successful project proposals.

In particular, three notable project proposals have emerged from the first two calls:

- **E-URAL project** -- European Union and Russia Link for S&T cooperation in the area of the environment. The aim of this project is to identify potential cooperation opportunities, the scientific excellence and the major research infrastructure in Russia in all areas of the FP7 Environment Theme. With the establishment of the EC-Russia Working Group (WG), the E-URAL project has updated its work plan in order to provide support for the WG, in particular by organising a series of thematic workshops which will bring together scientists from EU and Russia with a view to establishing future cooperation in areas of mutual interest.
- The **SUST-RUS project** -- The objective of the project is to develop and implement for Russia an integrated spatial-economic-ecological modelling approach, which represents the state-of-the-art in different areas of economic, transport, resource-use and environmental modelling, and can be used to assist policy makers in their choice of medium and long-term sustainability policies. The project coordinator is a Russian institution.
- The **EnviroGRIDS project** -- Building Capacity for a Black Sea Basin Observation and Assessment System supporting Sustainable Development. The project aims at developing a Black Sea Basin Observation System that will store, analyse, visualise and disseminate information on past, present and future states of the region to assess and predict its sustainability and vulnerability.

Additionally, Russia has participated in the BONUS ERA-Net and the 'BONUS+' action, where it was represented by the Russian Foundation for Basic Research, which is also the proposed partner for the BONUS Article 169 initiative currently in preparation. For more information on BONUS, please see www.bonusportal.org

Ongoing or planned activities

On 16 February, 2009, the EC-Russia Working Group on Environmental Research was formally established and an extensive discussion was held with regard to common cooperation priorities, optimal modalities of cooperation, and concrete cooperation activities for 2009/2010.

The lead Russian interlocutor in the working group is the Russian Federal Agency for Science and Innovation (FASI), with its Deputy Director General Mr Aleksander Klimenko as a co-chair. On the EC side, the working group is co-chaired by director Manuela Soares.

Both sides agreed that our FP7 project E-URAL could be used to advance the work of the EC-Russia working group in 2009 and 2010. In particular, four workshops co-organised by E-URAL, DG RTD and FASI will be prepared in the areas identified as joint priorities for cooperation. The first workshop on Climate Change Adaptation is scheduled to be held in Moscow on 10-11 November 2009. Additional proposed areas for future workshops include forestry and marine science.

With regard to cooperation modalities, both sides expressed particular interest in further exploring twinning as a preferred cooperation mechanism. As a pilot project on twinning, FASI proposed that they could initiate a Russian project which would be twinned with an existing FP7 project, MEGAPOLI (Megacities: emissions, urban, regional and global atmospheric pollution and climate effects, and integrated tools for assessment and mitigation). At present, FASI has already launched their own call and the results are expected in June. Once the Russian twin project is launched, more concrete twinning mechanisms will be explored.

Both sides also agreed to initiate regular exchange of information on workshops, conferences and other events that could be of interest to DG RTD and FASI.

Suggestions for new initiatives

Future initiatives and activities are expected to be further developed through the continued contacts between DG RTD and FASI within the framework of the working group and the work of the E-URAL project.

Preliminary contacts have shown that the following areas are of particular importance to the Russian side:

- Climate change impacts: adaptation and mitigation measures;
- Sustainable management of resources (which could more specifically include sustainable supply and management of water resources; waste management and waste reduction strategies; sustainable management of natural resources, sustainable management of mineral resources and others);
- Environmental technologies for sustainable development; and
- Environmental security: anthropogenic pressures on the environment, prevention and mitigation measures.

Theme/area TRANSPORT (INCLUDING AERONAUTICS)

Recent concrete achievements

Overall context

- Russia most successful international partner in FP6 and FP7.
- Joint Statement & Action Plan on Rail Research (2006) with Russian Railway Research Institute (VNIIZHT).
- A permanent joint EC-Russia working group in civilian aeronautics research was created in June 2007. Four meetings have been held so far and a Coordinated Call in the 2010 work programme is under preparation.
- The non signature by the Russian Federation of the agreement on the Siberian over-flight causes some difficulties in EU-Russia cooperation on ATM related research topics.

Sub-theme Aeronautics:

FP6: Russia was the most successful and most important international partner in FP6. A total of 21 proposals involving 32 Russian applications received an EC contribution of EUR 7.2M (for a total cost of EUR 13.5M). The main beneficiaries of EC funding were Central Institute of Aviation Motors (CIAM) and Central Aerohydrodynamics Institute (TsaGI) who received respectively EUR 2.9M and EUR 1.6M.

FP6 (Air Traffic Management): The Institute on Laser and Information Technologies of the Russian Academy of Sciences received EUR 150k of EC funding for its participation in the project SKY-SCANNER whose objective was to develop an Innovative LIDAR Technology for New Generation ATM Paradigms.

FP7 1st Call (2007 work programme): A total of 27 proposals with 40 Russian applicants requesting EC funding of EUR 13.4M were received, 22 were rejected, and five proposals involving seven Russian participants receiving a total EC contribution of EUR 4.6M (EUR 6M total cost) were retained for funding. Success rate of 18% in terms of number of applications funded, and of 35% in terms of funding received. The main beneficiaries of EC funding are Central Aerohydrodynamics Institute (TsaGI, EUR 3.4M) and the National Institute of Aviation Technologies (NIAT, EUR 454k).

FP7 2nd Call (WP2008): Some 36 proposals with 49 Russian applicants requesting a total EC funding of EUR 13M were received; 25 were rejected, and 11 proposals involving 17 Russian participants getting a total EC contribution of EUR 2.8M (EUR 3.8M total cost) were retained for funding. Success rate of 35% in terms of number of applications funded, and of 22% in terms of funding received. The main beneficiaries of EC funding are Central Aerohydrodynamics Institute (TsaGI, EUR 1M), New Technologies and Services LLC (EUR 371k), and the GROMOV Flight Research Institute (EUR 358k).

Two EU-Russia workshops in aeronautics were organised, on 28-29 April 2006 in Brussels and on 28-30 March 2007 in Moscow

EU-RU working group on civil aeronautics research: The working group was created in June 2007 and four meetings have been held: 10 October 2007 in Moscow, 17 April 2008 in Brussels, 28 November 2008 in Moscow, and 27 April 2009 in Brussels. In addition an informal meeting

was held in Brussels on 26 September 2008 to discuss topics to be included in the upcoming coordinated call.

Sub-theme Surface Transport:

FP6: Some 11 proposals involving 12 Russian applications received a total EC contribution of EUR 585k (for a total project cost of EUR 701k). The main beneficiaries of EC funding were Moscow State University of Railway Engineering (EUR 188k) and the Institute for High Performance Computing and Information Systems (EUR 88k).

FP7 1st Call (WP2007): Some 16 proposals with 23 Russian applicants requesting a total EC contribution of EUR 3.23M received, one was ineligible, 12 were rejected, two were selected on the main list and one was on the reserve list. The success rate was 35% in terms of number of applications funded, as well as in terms of funding received. Two projects involving eight Russian participants getting a total EC contribution of EUR 115k (100% of total costs) were selected for funding:

- Professional Transport Hijacking Counteraction Association was awarded EUR 51k (100% of total cost) for its participation in the Coordination and Support Action 'SIMBA II' which aims to increase road/urban transport research cooperation between Europe and Brazil, China, India, Russia and South Africa by establishing a collaboration network that will bring together the key stakeholders in the fields of Intelligent Transport Systems (ITS) and infrastructure development. Two workshops from this project took place in Moscow in October and November 2008.
- Moscow State University for Railway Engineering was awarded EUR 28k of EC contribution, and five other regional state universities as well as the Russian Research and Design Institute for Railway Information, Automation and Communication, were each awarded an EC contribution of EUR 5.5k for their participation in the Coordination and Support Action 'CETRRA' which aims at stimulating participation of cooperation partners in surface transport research.

FP7 2nd Call (2008 work programme): A total of 14 proposals with 21 Russian applicants requesting a total EC contribution of EUR 2.4M were received, three were ineligible, nine were rejected, and two were selected for negotiation:

- The Arctic and Antarctic Research Institute will participate (EUR 280k EC contribution requested) in the project SAFEWIN (Safety of Winter Navigation in Dynamic Ice) which aims at increasing the safety of winter navigation in dynamic ice conditions by developing an efficient ice compression and ice dynamics forecasting system.
- The Institute of Applied Physics of the Russian Academy of Sciences will participate (EUR 77k EC contribution requested) in the project EXTREME SEAS (Design for Ship Safety in Extreme Seas) which aims at helping the European industry to improve the design of ship structures that are exposed to rough climate, by providing technology and methodology used for ship safety in extreme seas.

A Russian National Contact Point for rail research has been nominated and has participated in different NCP support activities.

Sub-theme Galileo:

- **FP7 1st Call (WP2007):** Two proposals with three Russian applicants requesting an EC contribution of EUR 244k were received, one was rejected and one was selected for funding.

FGUP GosNII Aeronavigatsia and Research Design Lab NAVIS requesting EUR 35k and EUR 109k EC funding respectively will participate in the project GAGARIN (Galileo-Glonass Advanced Receiver Integration) aimed at developing a GNSS receiver for aeronautic applications with GALILEO/GLONASS integrated capability.

Ongoing or planned activities

Building on the work of the joint EU-Russia working group in civilian aeronautics research, a coordinated call (to be implemented as a single project with EU and RU participants) with the Ministry of Industry and Trade of the Russian Federation is under preparation for inclusion in the 2010 work programme, and is expected to be published on 31 July 2009. Five topics, jointly defined by the RF, will be open with a maximum total EU funding of EUR 4M (with a maximum per project of EUR 1.5M) for EU or AC participants. The RF will provide an equivalent amount of funding for the Russian participants. A workshop to promote the coordinated call is planned for 15-16 October 2009 in Moscow.

The next meetings of the EU-Russia civil aeronautics research working group are scheduled for 15 October 2009 in Moscow and March 2010 in the wake of the evaluation of the coordinated call in Brussels.

At the initiative of the Aeronautics unit, twining, through a specific consortium agreement, between large EU and Russian projects has been discussed:

- Although no specific agreement has been signed yet, twining of the SCARLETT and IMA (RU) projects has in practice been enforced, building on a memorandum of understanding between Thales and GOSNIAS signed at le Bourget in 2007. A common workshop will be held in autumn 2009.
- Twining is also considered for the projects MAAXIMUS (EU) and MAAXIMUSKY (RU).
- To promote the trans-national cooperation of FP7 Transport National Contact Points, the ETNA project (ETNA- European Transport NCP Alliance) was launched. ETNA offers training opportunities for non-European participants that could be beneficial to Russian partners to gain insights into transport research of FP7.

Suggestions for new initiatives

Sub-theme Aeronautics:

Building on the experience of the on-going coordinated call (2010 work programme), cooperation with Russia in aeronautics should develop through a more balanced partnership where the EU and the Russian Federation respectively fund their own participants. FP funding should thus decrease whereas the level of co-funded projects should increase.

Sub-theme Surface Transport:

Based on the Joint Statement & Action Plan - Rail (2006) action is possible in the following areas:

- Ecology, including the Kyoto Protocol and regulations on local emissions, noise and vibrations
- Decrease energy consumption and alternative energy sources
- Advanced materials
- Application of nanotechnology in rail transport
- Safety and security in particular analysis

- Regulation, standardisation and harmonisation of requirements for rolling stock and infrastructure
- Research for low-cost infrastructure components and systems

Horizontal Activities:

Action is possible in the following areas:

- Analysing the upcoming global competitive environment for the European transport industry, targeting manufacturers and hi-tech service providers. Resulting SWOT analysis and scenarios to identify strategic options for European transport research policy.
- Enhancing EU pre-competitive international cooperation through better coordination of Member States' pre-competitive transport research programmes tackling environmental efficiency/security. Enhancing communication and collaboration on international cooperation in relevant transport research programmes with third countries

Theme/area SOCIO-ECONOMIC SCIENCES AND HUMANITIES
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Recent concrete achievements

Under FP6, there were 89 Russian participants in submitted proposals; 13 of them participated in 12 selected projects:

- CONNEX (Efficient and democratic governance in a multi-efficient and democratic governance in a multi-level Europe) – Partner: Institute of World Economy and International Relations, Russian Academy of Sciences, Moscow.
- EUEREK (European Universities for Entrepreneurship - their Role in the Europe of Knowledge) – Partner: Higher School of Economy, Moscow.
- KASS (Kinship and Social Security) – Partners: Moscow School of Social and Economic Sciences, and Saint Petersburg State University.
- CLIOHRES.net (Creating Links and Overviews for a New Research Agenda for a Growing Europe and its History) – Partner: Moscow State Regional University.
- LLL2010 (Towards a Lifelong Learning Society in Europe: The Contribution of the Education System) – Partner: State University of St. Petersburg.
- REDCo (Religion in Education. A contribution to Dialogue or a factor of Conflict in transforming societies of European Countries) – Partner: Russian Christian Academy for Humanity, St. Petersburg.
- ENEPO (EU Eastern Neighbourhood: Economic Potential and Future Development) – Partner: Non-commercial Foundation Centre for Economic and Financial Research (CEFIR), Moscow.
- EUREQUAL (Social Inequality and Why It Matters for the Economic and Democratic Development of Europe and Its Citizens. Post-Communist Central and Eastern Europe in Comparative Perspective) – Partner: Sociological Institute Russian Academy of Science, St Petersburg.
- SAL (Society and Lifestyles: Towards Enhancing Social Harmonisation through Knowledge of Subcultural Communities) – Partner: Institute of Sociology, Russian Academy of Sciences, Moscow.
- GLOMIG (Global Migration from the Eastern Mediterranean and Eurasia: Security and Human Rights Challenges to Europe) – Partner: Institute for Globalisation Studies, Moscow.
- Mobilising SSH (Mobilising Future Research Collaborations in Social Sciences and Humanities in the EU, NIS and China) – Partner: Institute of Science, Innovation and Socio-Economic Programmes, Moscow.
- NEWGOV (New Modes of Governance) – Partner: European University St. Petersburg (EUSP).

Under FP7, there have been 100 Russian participants in 82 submitted proposals, 41 of the participants participated in the last call, the results from which are not currently available. To date, there are three Russian partners in three selected projects:

- AEGIS (Advancing knowledge-intensive entrepreneurship and innovation for growth and social well-being in Europe) – Partner: The Finance Academy under the Government of the Russian Federation, Moscow.

- ENRI-East (Interplay of European, National and Regional Identities: nations between states along the new eastern borders of the European Union) – Partner: Centre for Sociological Studies, Mgu (Moscow State University).
- NET4SOCIETY (Trans-national co-operation among National Contact Points for Socio-economic sciences and the Humanities) – Partner: Centre for Science Research and Statistics.

Ongoing or planned activities

There are, for the time being, no specific planned activities with Russia. However, Russian teams could usefully contribute to the topic on 'Europe facing a changing multi-polar world' as well as other topics of the 2010 work programme.

Theme/Area: SPACE

Recent concrete achievements

Cooperation has been going on with the EC for some time in a constructive manner, notably through Russian participation in the EU's R&D Framework Programmes and relevant EC co-funding of joint projects, such as – as a most prominent example - an EC contribution to the installation of a Soyuz launch pad at the European Space Port in Kourou / French Guyana.

In FP6, four projects involved Russian participants:

- Monruk – Monitoring of the Black and Caspian Sea region (+UA and KAZ)
- GEOLAND – Land cover Integrated Project
- GNU – GMES user network
- INTEGRAL – Glacier monitoring

In the first two calls of FP7 Russian participants were involved in eight proposals in each call. Four projects were successful in the first call and two projects from the second call will be funded:

FP7: First call

- 2 successful projects in GMES - 'MyOcean' and 'Geoland2';
- 2 successful projects in Space Foundations - HPH (in Space propulsion) and Soteria (solar and geophysics)

FP7: Second call

- 1 successful project in GMES;
- 1 successful project in Space Foundations

Ongoing or planned activities

FP7 Work programme 2010 (to be published in July 2009)

In response to the suggestions made by the working groups under the *EU-ESA-Russia Space Dialogue*, it is planned to include two Specific International Cooperation Actions (SICAs) with Russia in the 2010 work programme update under the FP7 Space programme:

- **GMES** – Cross validation methodologies for Russian and European Earth observations data.
- **Space Technologies**
 - Re-entry technologies and tools;
 - Multiple laser ignition technology;
 - Microbial detection and contamination understanding and countermeasures;
 - Electronic components procurement platform;
 - Space wire real time protocol.

Suggestions for new initiatives

In the oncoming years we expect further input from the working parties under the Space Dialogue. The Steering Board meeting in March 2009 was combined with a Euro-Russian Space Workshop, which gave further inspirations for a long-term cooperation.

Theme/area: RESEARCH INFRASTRUCTURES

Recent concrete achievements

In the field of existing research infrastructures there were 20 Russian organisations participating in 10 projects funded by the EC under FP6 for a total amount of *ca* EUR 2.9 M. Among them, 10 are under the umbrella of the Russian Academy of Sciences (RAS) with a total EC grant of about EUR 681.000 € representing *ca* 24% of the total EC grant allocated to participants from the Russian Federation.

Russia is actively present in the EC activities; however Russian organisations are represented mostly in the field of e-infrastructure: EGEE and EGEE-II, Enabling Grids for E-science in Europe; GÉANT the world leading communication infrastructure for education and research. e-Infrastructure projects represent *ca* 65% of the EC grant allocated to Russian organisations.

In the area of Environment and earth Sciences – some 22% of the grant - Russian organisations are represented in two major Integrated Infrastructure Initiatives: Black Sea Scene and Seadatanet.

The Black Sea SCENE project aims to establish a Black Sea Scientific Network of leading environmental and socio-economic research institutes, universities and NGO's from the countries around the Black Sea and to develop a virtual data and information infrastructure that will be maintained by these organisations. This will improve the identification, access, exchange, quality indication and use of their data and information about the Black Sea.

SEADATANET aims to develop an efficient distributed Pan-European Marine Data Management Infrastructure for managing large and diverse data sets related to the measurement of physical, geophysical, geological, biological and chemical parameters, biological species etc. The objective is to network the existing professional data centres of 35 countries, active in data collection, and provide integrated, on-line, databases of standardised quality.

Four Russian organisations are also participating in the DIRAC projects, linked with the International Accelerator Facility, Darmstadt Ion Research & Antiproton Centre: the design study, DIRAC secondary-Beams + the construction of new infrastructure, DIRAC-PHASE 1.

ILIAS also contains organisations which participate as 'associate' members, i.e. without having signed the contract. They are involved in isotope purification procurement activities. They are the Joint Institute for Nuclear Research, Dubna; the Institute for Nuclear Research, Baksan Neutrino observatory; the Institute for Theoretical and Experimental Research, Moscow.

Since 2007, Russia also participates to 13 FP7 projects (including six DG INFSO projects) for both existing and new research infrastructures, for a total EC contribution of *ca* EUR 1.9 M€. To note:

- The e-Infrastructure project *EGEE-III* (continuation of the above-mentioned FP6 project EGEE-II) with an EC contribution of *ca* EUR 740,000 to the KURCHATOV institute and eight further Russian institutes;
- The Russian Academy of Sciences is an active participant (eight institutes) in e-infrastructure actions (GÉANT, EGEE, supercomputing and data repositories)

- The participation in the Integrating Activity *Europlanet RI* of the Space Research Institute of the Russian Academy of Sciences (EC contribution EUR 185,750) which offers Transnational Access to its Planetary Field Analogue in the Kamchatka Peninsula.
- Participation to the Preparatory Phase projects ERICON-AB (aurora Borealis), FAIR, HiPER, PRE-FEL and to the Design Study (Social Sciences) MONDILEX.

In the context of new research infrastructures of the ESFRI Roadmap, Russia has signed an Memorandum of Understanding for two projects of the ESFRI Roadmap, FAIR and XFEL, and is actively negotiating for a third project, AURORA BOREALIS, for which there seems to be active interest at ministerial level.

Lastly, on June 1st a workshop was held in Moscow to present the 2008 update of the ESFRI Roadmap.

Ongoing or planned activities

During FP7, the Research Infrastructure action will continue to support existing RIs, as well as contribute in a catalytic way to the development of new RIs of pan-European/international relevance. Both types of action are fully open to participation of Russian institutes, with or without EC support, in all activities supported by our instruments.

- For the next three calls, support to existing infrastructures will in particular take the form of targeted calls for areas of Science and Technology identified by independent experts as key for the continued structuring of the ERA and supported by the Member States.
- Support to new research infrastructures will be given through both Design Studies (bottom-up) and construction of new infrastructures. As for the ESFRI Roadmap, it will provide a catalytic and leveraging support for the construction of the new ten facilities added through its Update, published in December 2008.
- In the area of e-Infrastructures the excellent cooperation with the numerous Russian partners will be maintained and further enhanced. Cooperation is foreseen in the context of trans-Siberian, Central-Asian, and Black Sea connectivity, as well as in the areas of Grids, high-performance computing and scientific data repositories.

Regarding the RI actions for existing infrastructures, we foresee to continue and develop the FP7 activities described above, encouraging participants from the Russian Federation to join research infrastructures project whenever feasible.

Regarding new research infrastructures, the interest and participation of the Russian Federation to the Roadmap projects is encouraging, and it is hoped that they will become involved in more projects in the future, especially those of a more global or distributed nature.

Suggestions for new initiatives

The potential for cooperation between Russia and EU on Research Infrastructures is quite large. It is worth noting in particular the following points:

- Neutron sources and the European Spallation Source: there might be scope for exploring the possibility of Russia converting their Gatchina neutron source reactor into a Regional partner Facility for ESS;
- The synchrotron at the Kurchatov Institute now has 15 refurbished beamlines, and plans for extension to 40 beamlines are underway. In parallel, a guest house with accommodation for scientists carrying out experiments has been completed, thus allowing the Kurchatov institute to open their synchrotron as an international user facility. The possibility to include this synchrotron in the next synchrotron I3 should be explored;
- Specific EU-Russia calls for nano-science projects have been opened. In parallel, the forthcoming call FP7-INFRASTRUCTURES-2010-1 could be an opportunity to pursue specific issues on international cooperation with Russia on Research Infrastructures;
- The possibility of forming a working group for research infrastructures is always present and could be discussed further.

Theme/area: SCIENCE IN SOCIETY

Recent concrete achievements

The European Commission was invited to present the Recommendations to the Member States on the Code of Conduct for Responsible Nanosciences and Nanotechnologies Research at the Second Saint Petersburg International Conference on NanoBioTechnologies (NANOBIO'08, <http://www.spbcas.ru/nanobio/Nanobio08/scope.html>) in June 2008. This was well perceived.

Under FP6, one Russian partner participated in the project PROMETEA (Empowering Women Engineers Careers in Industrial and Academic Research) – Partner: Orel State Technical University.

Under FP7, there have been 12 Russian participants in 11 submitted proposals, but there are currently no Russian partners in successful Science in Society FP7 projects. The results of the last evaluation are, however, still pending.

Suggestions for new initiatives

Activities with Russia could be further explored, in particular following NANOBIO'08 i.e. with regard to the safe development and use of nanotechnologies (EC Code of Conduct for Responsible Nanosciences and Nanotechnology Research).

Theme/area: INTERNATIONAL COOPERATION
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Recent concrete achievements and ongoing activities

The 'Activities of International Cooperation' programme, which falls under the FP7 Capacities programme, is designed to support and stimulate the participation of third countries in FP7 as well as to provide access opportunities in research programmes managed by third countries.

The activities supported by the programme have three major objectives:

- To strengthen bi-regional and bilateral dialogues in scientific cooperation and assist in joint identification of topics for collaboration under the FP7 thematic programmes;
- To network different stakeholders (such as universities, industry, government, civil society and donors) in order to strengthen research capacity;
- To facilitate the development and implementation of a coherent European-level approach towards international S&T cooperation.

S&T cooperation with Russia is considered as a long-term priority under the programme, given the fact that Russia is a neighbouring country with significant S&T capacities and has been the most successful third country in FP6. In order to enhance further EU-Russia S&T cooperation through FP7, the programme currently supports three projects involving or specifically targeting Russia: FP7 IncoNet EECA, BILAT-RUS and ERA-NET RUS projects.

Launched in January 2008, the FP7 **IncoNet.EECA** project aims to strengthen the bi-regional policy dialogue between stakeholders from the EU and the countries of Eastern Europe and Central Asian (EECA), among them Russia, on S&T cooperation. It also assists in the joint identification of topics for collaboration under FP7 thematic programmes and contributes to promote the participation of EECA research organisations in FP7. Over the first 18 months of project implementation, a methodology based on the organisation of thematic workshops has been developed for identifying relevant research areas that could be suitable as SICAs. On 16-17 June 2009, in Athens, a conference gathered scientists and policy makers from both EU and EECA regions and resulted in an exchange of experiences and views on the current state of the EU-EECA S&T cooperation, on present challenges and on concrete recommendations. Benefiting from the outcome of this event, a series of thematic conferences gathering stakeholders from both EU and EECA regions will be organised with the support of the project.

The **FP7 BILAT-RUS** project started in September 2008 aiming at enhancing bilateral EU-Russia S&T cooperation. The project provides assistance to optimise the framework for collaborative efforts, to specify fields of cooperation in joint priority research domains and to use information and knowledge more effectively. A database on S&T research institutes in Russia has been set up for this purpose and examples of particular good cooperation practices are being collected and analysed. The project also offers to provide assistance and knowledge to the joint thematic EU-Russian Working Groups on S&T cooperation. On 14 May 2009, in Moscow, a workshop gathering 30 experts was organised to discuss success factors for Russian participation in FP7. A variety of issues were addressed such as the role of policy coordination and joint instruments, the legal and regulatory framework, the need for further networking the S&T communities and optimising the FP7 advisory network.

Launched in February 2009, the **FP7 ERA.Net RUS** project aims to strengthen S&T cooperation between Russia and EU through the coordination of EU Member States' research

programmes towards and with Russia. It is planned to develop a concept for coordinating activities of S&T programme owners in EU and Russia and then to apply it by preparing and implementing a pilot joint call for research projects. Over the last six months, project participants have started identifying opportunities and specific needs for advanced cooperation of EU and Russian programme owners through developing and analysing specific questionnaires. A workshop was also held on 25-27 June 2009 in Tallinn (Estonia) in order to draw lessons and to discuss experiences from the bilateral S&T programmes of EU Member States and Associated States towards and with Russia.

Planned activities

A new FP7 project, **Access4EU-Russia**, should start in the autumn of 2009, aiming to help EU researchers and research organisations access Russian science and innovation programmes. It is planned to map and analyse those programmes in order to identify collaboration opportunities more effectively. The project should implement dissemination and awareness raising campaigns based on a 'two way' approach: it will promote both the access to Russian programmes inside the EU and the involvement of EU partners in publicly-funded research activities in Russia.

Theme/area: MOBILITY OF RESEARCHERS
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Recent concrete achievements

In FP6, Russia was the most successful third country in receiving individual Marie Curie Fellowship grants.

- With 59 incoming Russian fellows to be trained in Europe, Russia did better than China, India or the US. Some 16 of these also received a return fellowship to Russia.
- Three Russian scientists (out of 63) were awarded a chair under the Marie Curie Excellence Measures.

In addition, some Russian organisations participated in FP6 host-driven actions:

- 9 Russian host organisations received funding as additional partners in the Research Training Networks.
- 1 Russian host participated in the Marie Curie Conferences and Training Courses; and
- 2 Russian hosts participated in the Transfer of Knowledge (ToK) action.

To date 4 fellows have been hosted at these Russian institutions through these fellowships.

Many of the host driven actions funded under FP6 are still running and so are continuing to recruit fellows. The figures are therefore continuing to change. We are seeing a slowing down in the numbers of Russian fellows being recruited into the FP6 networks.

To date, 204 Russian fellows have been recruited into the host fellowship schemes:

- 48 into the host fellowships for Early Stage research Training (EST);
- 6 into the Marie Curie excellence team: the predecessor of the ERC;
- 117 into Marie Curie Research Training Networks (RTN);
- 33 in Marie Curie Transfer of Knowledge fellowships; and
- 166 Russians received funding to participate in the Marie Curie Conferences and Training Courses.

However, over the last year, the numbers of fellows recruited into the FP6 host networks from Russia has been surpassed by the numbers of US fellows recruited into these networks, which has now risen to 248 fellows.

In FP6, only one European Fellow was successfully funded to take up an International Outgoing Fellowship in Russia. This Fellow however withdrew his application before taking up the fellowship.

The brain circulation between Russia and the EU in FP6 was therefore rather unbalanced. Whilst Russia was one of the most successful countries to receive funding for fellows to come to Europe, only a few researchers were funded to go to Russia under FP6. In total, 266 Russian

researchers came to Europe; only 16 Russians returned to Russia with funding through a return Fellowship and only four Europeans went to Russia within the host fellowships.

EURAXESS Jobs Portal: This portal has been providing comprehensive and improved information on mobility within and towards Europe ranging from fellowship and career opportunities to practical information to move and settle in as a researcher in Europe. In addition, researchers can post their CV's on the portal as a venue for creating career opportunities in Europe. As such, the Portal, indeed, is 'a one-stop shop' for researchers seeking to advance their careers and personal development by moving to other countries.

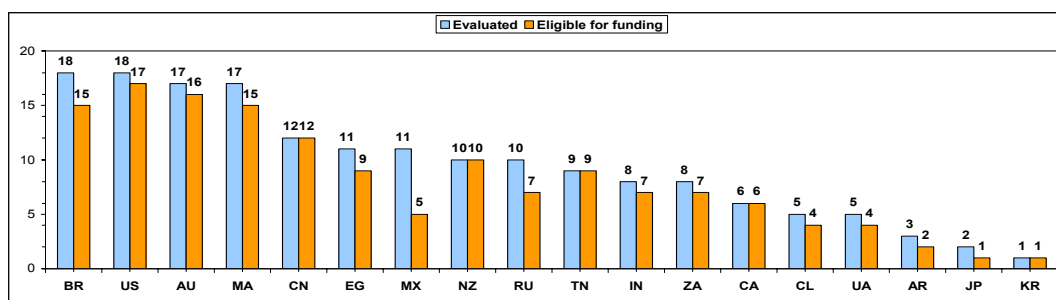
EURAXESS Services Centres: These mobility centres are providing customised assistance to researchers and their families. The services offered are provided for researchers from the EU and Third Countries alike and they span a broad range of practical issues like entry conditions, social security, taxes, language and culture, family support, etc. Currently, there are *ca.* 200 Mobility Centres and numerous contact points in 35 countries.

'Scientific Visa': The 'Scientific Visa' is informal terminology defining a permission to enter, stay and work in the EU for the purpose of carrying out scientific research. Legally speaking, it concerns the entry visa and the residence permit for Third Country researchers. A Directive adopted by the Council during 2005 covers long-term stays (more than three months). So far, twenty-three out of twenty-five concerned Member States have notified what they identified to be measures fully transposing the Directive.

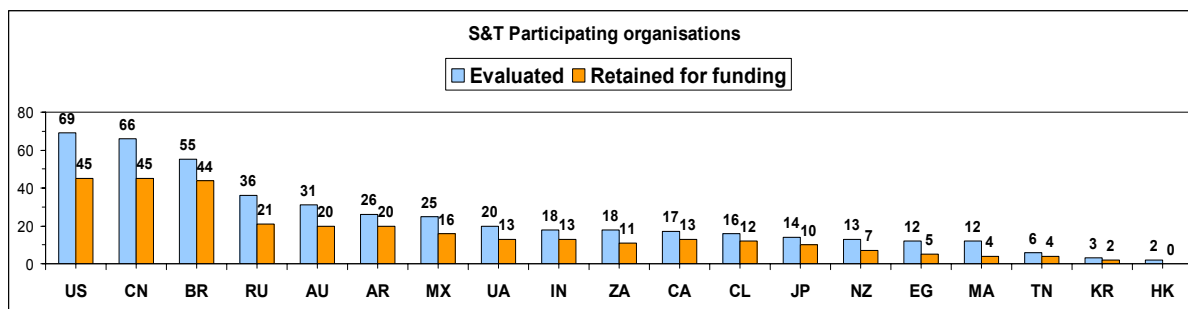
Ongoing or planned activities

The FP7 Marie Curie International Research Staff Exchange Scheme (IRSES) aims to create a more balanced approach to the exchange of researchers between research organisations in the EU/Associated Countries and those located in Neighbourhood Countries or in Countries with a Science and Technology Cooperation Agreement.

Russia has participated strongly in the first two years of the IRSES calls for proposals, but is not as prominent as it has been in Marie Curie actions in FP6. In the first call, Russia participated in 10 proposals of which seven were funded. Overall Russia was the ninth most successful third country, as shown in the graph below:



The participation of Russian research organisations increased significantly in the second call, trebling the number of successful project participations and was the fourth most successful third country, as shown in the following graph:



Russian participation in the International Incoming Fellowships remains very strong, but not at the same levels as in FP6. The US is the most successful third country with 51 successful proposals from the first two calls, followed by China (42), India (40) and Russia (39).

There were 10 applications for the Outgoing International Fellowships (OIF) for fellowships in Russia in the calls in 2007 and 2008. One proposal was funded in 2007 to a fellow with joint UK/Russian nationality to take up a fellowship in Russia. This is the first OIF which will be taken up in Russia.

In the host fellowships, one partner has been successful in the Industry-Academia Partnership and Pathways (IAPP) scheme and 4 Russian partners have been involved in successful Individual Training Network (ITN) projects.

EURAXESS

All EURAXESS activities are being continued, promoted and expanded. Since Russian researchers can benefit from these activities, and they will consequently benefit further from this continuing development.

Suggestions for new initiatives

It would be recommended for Russia to prepare more applications for all Marie Curie schemes, notably the IRSES and IAPP schemes, as well as becoming more involved as partners in ITN proposals.

Theme/area: EUROPEAN RESEARCH COUNCIL
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Recent concrete achievements

Proposals submitted by Russian nationals:

- **Starting grant 2007:** The ERC first call for proposals has been extraordinarily successful. Out of 9167 proposals submitted, 299 proposals were selected for funding. 109 proposals were submitted by Russian nationals: 20 Life Sciences (LS) proposals, 84 Physical sciences proposals (PE), 5 Social sciences and Humanities (SH) proposals, which represent 1.2 % of all submitted proposals. One proposal was successful with a host institution in the UK.
- **Advanced grant 2008:** 275 candidates have been selected out of 2167 applications so far (reserve list with 19 researchers). 23 proposals: 3 LS proposals, 18 PE proposals, 2 SH proposals were submitted by Russian nationals which represent 1.1 % of all submitted proposals. There are no proposals from Russian nationals amongst the 275 selected proposals.
- **Starting grant 2009:** The recent ERC Starting grant call with deadlines in October – December 2008 had fewer submissions in total: 2503 proposals, out of which again around 300 projects will be funded. 30 proposals: 4 LS proposals, 21 PE proposals, 5 SH proposals were submitted by Russian nationals (1.2 % of submitted proposals). The evaluation is ongoing.
- **Advanced grant 2009:** 1584 proposals were submitted. 13 applications or 0.8% of the total number of applications were made by Russian nationals. The evaluation is ongoing.

Mobility from Russia to the EU Member States and Associated Countries:

A number of applications from researchers with a residence in Russia and worldwide has been received:

- **Starting grant 2007:** 15 applications were submitted from researchers with a residence in Russia. None of the proposals were successful.
- **Advanced grant 2008:** The number of applications from outside Europe was limited. Only 2 researchers with a residence in Russia applied for this call but none of them were amongst the top 275 proposals anticipated for funding.
- **Starting grant 2009:** One application was submitted from a researcher with a residence in Russia. The evaluation is ongoing.
- **Advanced grant 2009:** Two applications were submitted from researchers with a residence in Russia. The evaluation is ongoing.

Future activities

For the coming years, there will be a continuation of the grant schemes (Starting Grant and Advanced Grant) which are the flagships of the ERC. One of the objectives of the Scientific Council is to make the ERC schemes better known outside the European Union to make Europe more attractive to the best researchers from all over the world to Europe.

Theme/area: NUCLEAR ENERGY

Recent concrete achievements*Fission*

A so-called coordinated call process was agreed between Euratom and Rosatom based on the structured dialogue with Rosatom held over a period of more two years (it should be noted that the term 'coordinated call' is not exact, since Rosatom will not have a real call for proposals on their side, but just an allocation of tasks as required).

Fusion

The Fifth Coordinated Committee meeting of the Euratom-Russia Cooperation Agreement in fusion energy research was held in Geneva last October 2008. The main outcome was the establishment of a joint working group to assess the implications of the Russian association to the JET (Joint European Torus) operation and exploitation.

Fission / Fusion

The ISTC programme is also a relevant element of the Euratom-Russia cooperation in fission and fusion research domains. Out of 2640 ISTC regular and partner projects (more than US \$ 800M), the EU funding has covered, since 1994, a total of 114 fission related projects (US \$31.8M), as well as 22 fusion related projects (US \$4.7M). In this regard, the role played in recent years by specific Contact Expert Groups (CEGs) fostering collaboration and establishing programmatic approaches with Russian entities in the areas of 'Severe Accident Management', 'Partitioning and Transmutation', 'Plant Life Management' and 'Fusion RTD' is emphasised.

Ongoing or planned activities*Fission*

The above-mentioned coordinated joint process between Euratom and Rosatom included four topics in the 2009 call requiring a mandatory coordinated Russian project. The EC received proposals for the parallel Euratom projects in three out of the four topics, and in total the EC is ready to provide up to EUR 2.5 million in funding provided that Russia also supports the parallel projects.

At the 'Fission R&D cooperation working group' meeting on 26 June in Prague, Euratom presented the three selected proposals where Russian participation is mandatory and the four selected proposals where the Russian cooperation is optional. The Russian delegation reaffirmed interest in cooperation in all the topics listed, although it was stressed that they were not yet in a position to confirm availability of budgets for the parallel RU projects. This would only be possible over the coming months. Therefore, the EC cannot launch the negotiations of grant agreements with European consortia for those projects where cooperation with Russia is mandatory until further assurances are received. Negotiation of other projects, i.e. where cooperation is optional, will be launched by the end of July.

Russia is still ratifying the Generation IV International Forum (GIF) Framework Agreement. A full membership of Russia in the GIF should herald the start of multilateral cooperation in the area of advanced reactor systems, and this should also be of mutual benefit for Euratom in one or two of the six GIF systems under study.

Fusion

Follow-up of running activities, in particular on the possible Russian partnership to the programme of operation and exploitation of JET and those collaborative activities between Euratom fusion associations and Russian entities.

Suggestions for new initiatives

Fusion

The 6th Coordinated Committee meeting of the Euratom-Russia Cooperation Agreement in fusion energy research should be preferably held within 2009.

Theme/area: COOPERATION PROGRAMME: COST AND EUREKA

COST

Recent concrete achievements

Although Russia is not a COST member country, it can participate in COST actions. As of May 2009, Russia participates in 21 COST Actions (COST projects) within six of the nine scientific Domains covered by COST

Ongoing or planned activities

Seven of the 21 ongoing Actions are within the domains of Materials, Physical and Nanosciences. The other participations are within the domains of Biomedicine and Molecular Biosciences, Food and Agriculture, Earth System Science and Environmental Management, Chemistry and Molecular Sciences and Technologies, as well as Information and Communication Technologies. A total of 33 Russian research institutions are involved.

COST Actions normally run for four years, with an annual budget of around EUR 100,000.

Suggestions for new initiatives

In general, institutions from non-COST countries can join a COST Action on a case-by-case basis once the mutual benefit has been ascertained, without the need for any formal arrangements at government or agency level. Therefore, New Actions as well as running Actions are open for participation by researchers from Russia.

With this easy accessibility and light procedures, COST considers itself a 'bridge' for the scientific communities both at European and international level. More than 230 Institutions from 29 non-COST countries are presently participating in COST Actions.

EUREKA

Recent concrete achievements

Russia is a member of EUREKA since 1993, but they have been participating in projects since the beginning in 1985. They are 20 running projects with Russian partners and 66 completed projects. Russian partners have received total funding of EUR 80M: an average of EUR 500k per project. The Russian participants are principally from academic institutions (60%); the remaining 40% are from industry. Russia does not participate in the Eureka clusters or in the Eurostars project.

Theme/Area: JOINT RESEARCH CENTRE (JRC)
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The Russian Federation is recognised as being among the Main Partner Countries for the Joint Research Centre's S&T international collaboration, and the JRC looks forward to increasing it further.

Recent concrete achievements

The JRC was involved as a partner, together with Russian participants, in the following FP6 projects (indirect actions):

- 'ACT-ECO', Eco efficient activation for hyper functional surfaces, JRC-IHCP with the State Research Centre of Russian Federation Troitsk Institute for Innovation and Fusion Research;
- 'ROADS2HYCOM', Research Coordination, assessment, deployment and support to HyCOM, JRC-IE with the Centre CORTES Ltd.;
- 'FULSPECTRUM', Multijunction solar cells, thermophotovoltaics, advanced concepts for photovoltaic conversion, JRC-IES, with the Ioffe Physicotechnical Institute;
- 'COVERS', VVER Safety Research, JRC-IE with the Russian Research Centre Kurchatov Institute, the Electrogorsk Research and Engineering Centre on Nuclear Power Plants Safety, the Experimental and Design Organisation Hidropress, the Russian Research Centre Kurchatov Institute, and the Electrogorsk Research and Engineering Centre on Nuclear Power Plants Safety;
- 'ALISIA', Assessment of Liquid Salts for Innovative Applications for nuclear waste minimisation, JRC-ITU with the Russian Research Centre Kurchatov Institute;
- 'HYSAFE', Safety of Hydrogen as an Energy Carrier, JRC-IE with the Russian Research Centre Kurchatov Institute.

In addition, the All-Russian Research Institute of Automatics had a collaboration agreement with the JRC-ITU (direct action).

Ongoing or planned activities

The JRC is currently involved as a partner, together with Russian participants, in the following FP6 projects (indirect actions):

- 'SEADATANET', a Pan-European Infrastructure for Ocean and Marine Data Management, JRC-IES with the All-Russian Research Institute of Hydrometeorological Information - World Data Centre – B, and the P.P. Shirshov Institute of Oceanology Russian Academy of Sciences;
- 'REALISEGRID' the optimal development of the European trans-national transmission grid infrastructure, JRC-IE with the R&D Centre for Power Engineering;
- 'NITROEUROPE IP', the nitrogen cycle and its influence on the European greenhouse gas balance, JRC-IES, with the A. N. Severtsov Institute of Ecology and Evolution - Russian Academy of Sciences and the Institute of Physicochemical and Biological Problems in Soil Science of Russian Academy of Sciences;
- 'HEIMTSA', Health and Environment Integrated Methodology and Toolbox for Scenario Assessment, the JRC-IHCP with the Meteorological Synthesising Centre-East;

- 'SESAME', Southern European Seas: Assessing and Modelling Ecosystem Changes, JRC-IES, with the Southern Scientific Centre (Russian Academy of Sciences);
- 'FCOTESQA', Fuel Cell Testing, Safety, Quality Assurance, JRC-IE with the Russian Research Centre Kurchatov Institute and the Institute of Physics and Power Engineering;
- 'GABRIEL', Asthma, Genes And The Environment, JRC-IHCP with the Siberian State Medical University of the Federal Agency on Health Care and Social Development;
- 'FCANODE', Non-noble Catalysts for Proton Exchange Membrane Fuel Cell Anodes, JRC-IE with the Borekov Institute of Catalysis of the Siberian Branch of the Russian Academy of Sciences;
- 'ECOOP', European Coastal-shelf sea Operational observing and forecasting system, JRC-IES with the Russian State Hydrometeorological University;
- 'CO-EXTRA', GM and non-GM supply chains: their Co-existence and Traceability, JRC-IRMM with the Centre Bioengineering, Russian Academy of Sciences;
- 'EURANOS', European approach to nuclear and radiological emergency management and rehabilitation strategies, JRC-IES with the Scientific Production Association Typhoon;
- 'MONRUK', marine monitoring services for Russia, Ukraine and Kazakhstan, JRC-IPSC with the Niersc Scientific Foundation Nansen International Environmental and Remote Sensing Centre;

In FP7, the JRC is currently involved as a partner, together with Russian participants, in the following projects (indirect actions):

- 'MYOCEAN', Ocean Monitoring and Forecasting, JRC with the Scientific foundation Nansen International Environmental and Remote Sensing Centre (NIERSC);
- 'RECOZY', Redox phenomena controlling systems, JRC-ITU, with the MV Lomonosov Moscow State University;
- 'FISHPOPTRACE', Structure of Fish Populations and the Traceability of Fish and Fish Products, JRC-IPSC, with the MV Vniro Russian Federal Research Institute of Fisheries and Oceanography;
- 'SECURE', Security of Energy Considering its Uncertainty, Risk and Economic Implications, JRC-IE with the Energy Research Institute of the Russian Academy of Sciences;
- 'IRIS', Integrated European Industrial Risk Reduction System, JRC-IPSC, with CVS CKTI - Vibroseism LTD;
- ERA.NET RUS, JRC-IPTS, with the Kurchatov Institute.

In addition, the JRC participates with Russian partners in the following direct actions:

Collaboration agreements:

- Scientific Production Association Typhoon with the JRC-IES, on EURDEP: data-format, software, network, website, support;
- Russian Federal Nuclear Centre Institute of Technical Physics with the JRC-IPSC on IT Materials;
- M V Lomonosov Moscow State University, Faculty of Physics with the JRC-IES on soil science building protection.

Institutional Networks:

- The Research Institute of Atmospheric Air Protection, the Institute of Geography Russian Academy of Science, and the Meteorological Synthesising Centre-East: the JRC-IES Combustion and Industry Expert Panel;

- The Ministry of Atomic Energy with the JRC-ITU: the International Technical Working Group on combating nuclear smuggling ITWG Nuclear forensics, illicit trafficking.
- The D.I. Mendeleev Institute for Metrology with the JRC-IRMM EUROMET on chemical measurements, metrology.
- The International Forest Institute Russian Academy of Science with the JRC-IES; GLOBAL BURNED AREA 2000 GBA 2000 on satellite remote sensing, vegetation fires, modelling, global change.
- The Scientific Production Association Typhoon with the JRC-IES: Radioactivity Environmental Monitoring, on Radiological environmental monitoring, Euratom Treaty, radioactivity, emergency response, international data exchange.

Suggestions for new initiatives

- Make use of the existing agreements for increased S&T collaboration between JRC institutes and Russian organisations, as Russia is recognised as a Main Partner Country for JRC S&T international collaboration.
- The JRC offers the possibility for staff exchanges in the area of its competencies, for long (junior level) or shorter (senior level) periods.
- Russian experts participating at the JRC Enlargement and Integration Action workshops.

Promising areas for further collaboration may cover:

- Crop yield forecast;
- Climate Change: development of world emission scenarios under different global policy setups;
- FOODSEC (food security): a crop monitoring and yield assessment system has been developed in Partnership with the Food and Agriculture Organization of the UN (FAO);
- Research Policy Analysis and Monitoring: In addition to the 27 EU member states, the ERAWATCH research inventory currently provides research policy and related information on the states associated to the framework programme. This can be opened to include the Russian Federation;
- Energy: specific tasks for joint activities as set out in the Progress Reports of the EU-Russia Energy Dialogue and JRC inputs to the Commission's network of energy correspondents. Consequently, this action provides data inputs and information in the database on Gas Energy Network of Europe, Russia;
- MASURE (maritime surveillance).