

# EU-Russia Cooperation in Science & Technology

# Opportunities within the 7th Framework Programme for RTD

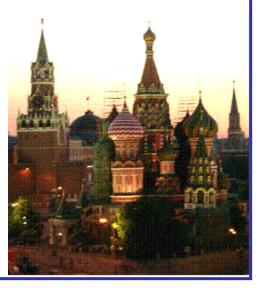
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## **Outline of the presentation**

- •Why research at European level ? Rationale
- EU Framework Programmes for RTD (FP)
   Role and content
- Russian participation in EU Framework Programmes
- Europe 2020 Flagship Initiative Innovation Union
- Horizon 2020
   the Framework Programme for Research and Innovation
- New opportunities for participation in FP7
   Calls for proposals published on 20 July 2011

## Why research at European level?



## **European Research Area (ERA)**

Article 179 (1) of the Lisbon Treaty (1 December 2009):

The Union shall have the objective of <u>strengthening its scientific and</u> <u>technological bases</u> by achieving a <u>European research area</u> in which researchers, scientific knowledge and technology circulate freely, and encouraging it to become more competitive, including in its industry, while promoting all the research activities deemed necessary by virtue of other Chapters of the Treaties.

## Why research at European level?



## **European Research Area (ERA)**

Concept of ERA can be likened to a 'research and innovation' equivalent of the EU "internal market" for goods, capital, services and people.

Purpose: to increase competitiveness of European research institutions by bringing them together and encouraging a more inclusive way of work, through:

- integrating the scientific resources of the European Union
- multi-national co-operation in science, research and innovation
- increased mobility of knowledge workers and deepened multilateral cooperation among research institutions among the Member States
- international / worldwide cooperation

# The role of the European Framework Programmes for RTD



The EU Framework Programmes (FPs) are the main instrument designated by the EU / Lisbon Treaty to support the concept of ERA

#### **European FPs bring down barriers**

- between countries:
  - multinational consortia
  - researchers from any country in the world can participate
  - coordination among national funding programmes
- between different types of organisations: universities, research centres, SMEs, large companies, etc.
- between disciplines: increased focus on translational research
- and encourage mobility: Marie Curie fellowships available for researchers and for host institutes

# European Framework Programmes for RTD (FPs)



## FP = financial instrument for EU research strategy

- Largest publicly funded competitive RTD programme worldwide (annual budget in FP7 > €7 billion)
- Basic rule: trans-national collaboration
- Thematic programmes in all relevant technology areas (health, agri-bio-food ..... → space research)
- Special programmes for researchers' mobility, research infrastructures, SMEs, capacity building
- A fixed budget for a defined number of years



## FP7 2007 -2013

## 4 Specific Programmes

plus JRC, nuclear and non-nuclear research (2.5 bn €)



#### Cooperation

32.3 billion €

**Trans-national** cooperation in 10 research themes through multi-national **consortia**.



#### **Ideas**

7.5 billion €

Funding for top researchers from anywhere in the World: investigator-driven "frontier research", supported by an autonomous European Research Council (ERC)



#### **People**

4.7 billion €

Training, mobility, career development of researchers, ("Marie Curie" actions) - incl. International grants



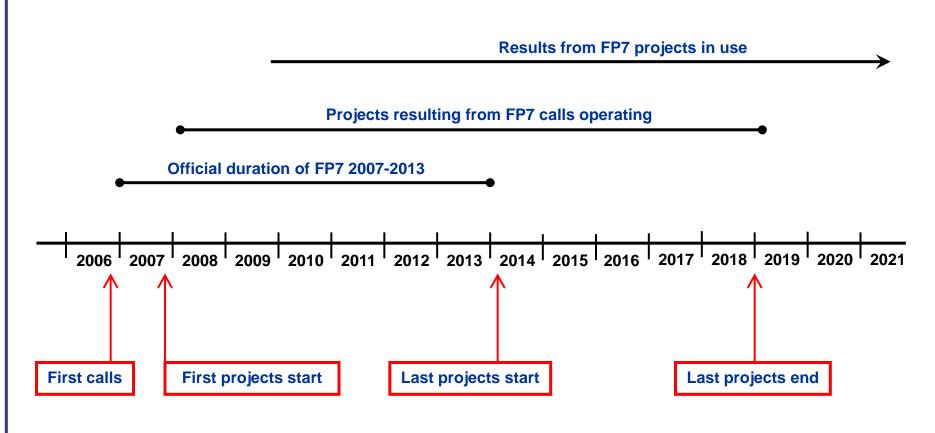
#### **Capacities**

4.2 billion €

Research infrastructures; research specifically for SMEs; regional research driven clusters



## Timeframe for FP7 projects





## FP7 "Cooperation"

	<b>Thematic Priorities:</b>	Billion Euro
1.	Health	6,0
2.	Food, agriculture & biotechnology	1,9
3.	Information & communication technologies	9,1
4.	Nanotechnologies & materials	3,5
5.	Energy	2,2
6.	Environment	1,9
7.	Transport	4,1
8.	Socio-economic sciences	0,6
9.	Security & 10. Space	2,9
The EC currently manages only about 6% of total public R&D investment in the EU		
EU countries invest on average ~2% of GDP in research		



## FP7 "Ideas"

## **European Research Council (ERC)**

- To support investigator-driven frontier research over all areas of research
- By individual teams
- Excellence as sole criterion
- Autonomous scientific governance
- Simple, user-friendly delivery
- Team Leader ("Principal Investigator") assembles his/her research group; freedom to choose the research topic; members may be drawn from one or several legal entities, from within or across national boundaries including 3<sup>rd</sup> countries



## FP7 "People"

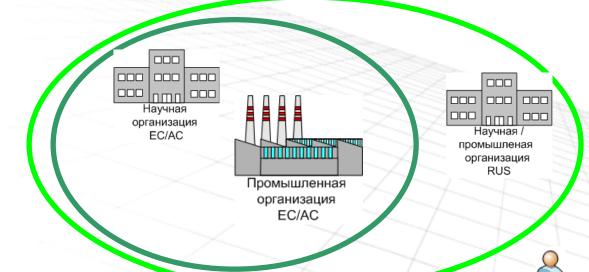
### Marie Curie Actions - Fellowships, Grants, Awards

- Initial training
  - Initial Training Networks (ITN) \*
- Life-long training and career development
  - Intra-European Fellowships (IEF) \*/ Career Integration Grants (CIG)
  - Co-funding of regional/national/international programmes (COFUND)
- Industry dimension
  - Industry-Academia Partnerships and Pathways (IAPP) \*
- International dimension
  - International Outgoing & Incoming Fellowships (IOF & IIF) \*
  - International Staff Exchange Scheme (IRSES) \*
- Policy support actions
  - Mobility and career enhancement actions





# Сотрудничество между промышленностью и научным сообществом *IAPP*

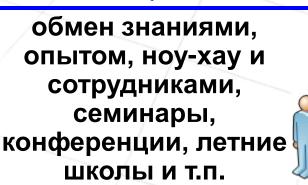


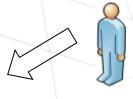
Международный консорциум:

Min = 1 научная орг. + 1 коммерч. предприятие из разных ЕС/АС

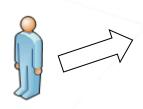


организации и предприятия др. стран











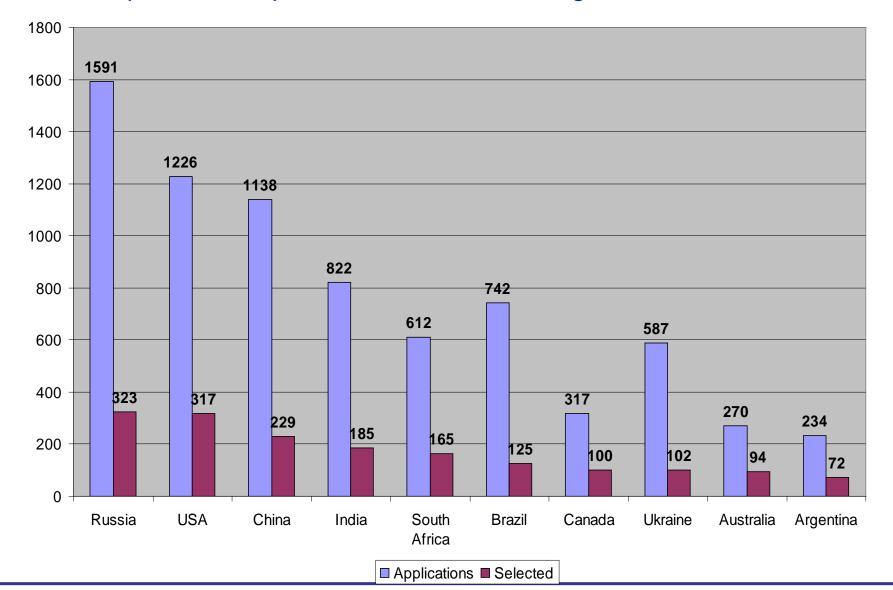
# FP7 "Capacities"

- Research infrastructures
- Research for the benefit of SMEs
- Regions of Knowledge
- Research Potential
- Science in Society
- Coherent development of policies
- Activities of International Cooperation



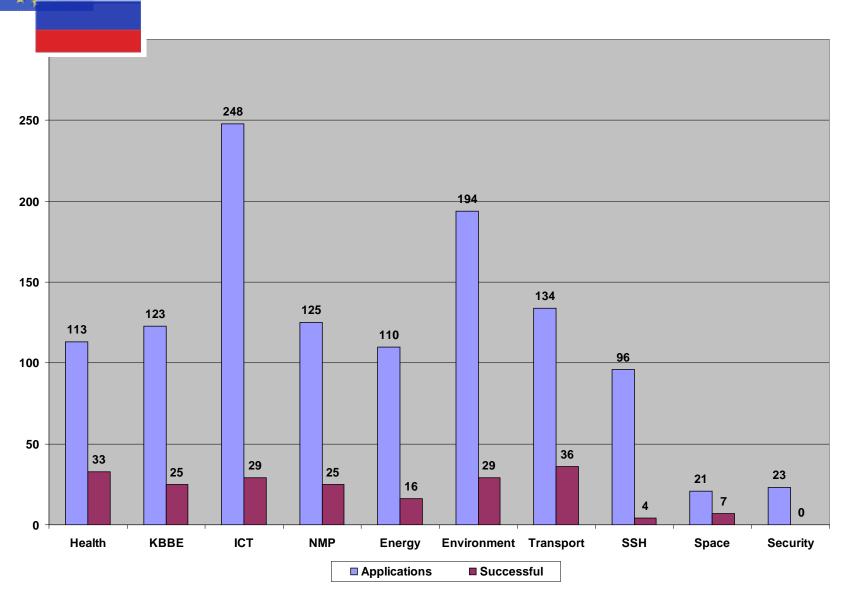
#### Int'l Partner Countries Participation in FP7:

Applications Submitted and Retained Cooperation, Capacities and Euratom Programmes 2007 - 2010



## Russia: Cooperation Programme 2007-2010

Applications Submitted and Retained (by thematic area)





# Russia in the 7th EU Framework Programmes for RTD (2007-2013)

#### By 2011:

- Overall, Russia is the most active international partner country \*
- 391 Russian participants in 264 projects, receiving ~ € 45 million EU funding
- Highest participation in Health, Transport, Agri-Biotech-Food and Nanotechnologies / materials research

<sup>\*</sup> International partner country = neither EU Member State nor country associated with FP



# **FP7 Work Programmes 2012**

published : 19 July <u>2011</u>

http://ec.europa.eu/research/participants/portal

**Opportunities for Russia** 



## FP7 Work Programmes 2012

- Legal basis for the implementation of FP7
- Contain full information on the calls for proposals open in 2011-2012
  - Details of topics and expected impacts, budgets and timing of calls etc.
- Work programmes of actions of over €7 billion, including:
  - 39 calls issued on 20 July 2011 with budget of €5.31 billion
  - Additional 15 calls for €1.74 billion to be issued in 2011-2012
  - Other non-call activities also included



## <u>Health</u>

- Two major calls € 654 million
- Deadlines: 27-09-2011 and 04-10-2011
- Research priorities:
  - Major focus on: ageing, including health systems, medical technologies, rare diseases
  - Other areas covered: personalised medicine, availability of organs for replacement, better understanding of ageing, chronic diseases related to ageing, adapting healthcare to specific needs
- Topics of particular interest may include:
  - Health Systems and Services, SICA [Topic: HEALTH.2012.3.4-1]
- Other topics in areas of mutual interest may include:
  - Ageing population several topics area of interest for Russia
  - Diabetes 2 topics area of mutual EU-Russia interest
  - Rare diseases several topics need for international collaboration
  - ERA-NET on infectious diseases



# Knowledge Based Bio-Economy - KBBE

- One call €304.57 million
- <u>Deadline:</u> 15-11-2011
- Research Priorities:
  - Sustainable primary production; mitigating and adapting to climate change
  - Low carbon and resource efficient industry
  - Food security and safety for Europe and beyond
  - Socially inclusive and healthy Europe
- Topics of particular interest may include:
  - Insects as novel sources of protein, SICA [Topic: KBBE.2012.2.3-05]
  - African Swine Flu Russia targeted [Торіс: КВВЕ.2012.1.3-02]
  - Global Food Safety targeted to international partners [торіс: квве.2012.2.4-03]
  - Food safety/quality related to parasites in seafood targeted to Asian partners
     [Topic: KBBE.2012.2.4-02]
  - Food and health research infrastructures need for international / links to infrastructures in third countries [Τορία: ΚΒΒΕ.2012.2.2-02]
  - Support to standardisation for bio-based products need for harmonising standards with major trading partners [Торіс: КВВЕ.2012.3.3-02]



# Knowledge Based Bio-Economy – KBBE (2)

Other topics in areas of mutual interest may include:

- Forestry research several topics area of mutual EU-Russian interest
- Fisheries management several topics also covering Baltic and Black Seas
- International comparisons of product supply chains in the agro-food sector [Topic: KBBE.2012.1.4-09]
- Risk management of food allergies need for comparisons of populations across Europe [Topic: KBBE.2012.2.4-04]
- Animal health surveillance methodologies should be applicable to other world areas [Topic: KBBE.2012.1.3-01]
- Post-market monitoring of GMOs based on epidemiological studies calls for international comparisons [Topic: KBBE.2012.2.4-05]
- Innovative biotechnologies for tackling oil spill disasters [Topic: KBBE.2012.3.5-01]
- ERA-NETs in synthetic biology and sustainable exploitation of marine resources [Topics: KBBE.2012.3.6-01 and KBBE.2012.1.2-13]



# Information Communication Technologies - ICT

- Three Calls Call 8 (20 July, €787 mln), Call 9 (18 January, €291 mln), Call Future Internet (18 May, €80 mln)
- Three Cross-thematic calls Factories of the Future (20 July, € 160 mln);
   Energy-Efficient Buildings (20 July, € 140 mln);
   ICT for Green Cars (20 July, € 330 mln)
- <u>Deadlines:</u> 01-12-2011 and 17-01-2012
- <u>Future and Emerging Technologies (FET) call</u> still open for proposals (deadline: 12-03-2013)
- Focus around a number of key challenges:
  - pervasive and trusted network and service infrastructures
  - cognitive systems and robotics
  - alternative paths to components and systems
  - technologies for digital content and languages
  - ICT for health, ageing well, inclusion and governance
  - ICT for a lower carbon economy
  - ICT for manufacturing & factories of the future
  - ICT for learning and access to cultural resources



# Information Communication Technologies – ICT (2)

- Topics of particular interest may include:
  - International partnership building and support to dialogues [торіс: іст-2011.10.3]
  - Future internet research and experimentation cooperation with industrialised countries/emerging economies [торіс: ІСТ-2011.1.6]
  - Future networks international partners targeted for support actions
     [Topic: ICT-2011.1.1]
  - Challenging current thinking actions aiming to strengthen the international dimension of FET [Topic: ICT-2011.9.1]
  - International cooperation on FET research [торіс: ICT-2011.9.4]
  - FET Proactive Dynamics of Multi-level complex systems,
     unconventional computation, and neuro-bio-inspired systems global alliances [Topic: ICT-2011.9.7] [Topic: ICT-2011.9.6] and [Topic: ICT-2011.9.11]
  - ICT for fully electric vehicles [Topic: GC-ICT-2011.6.8]



# Nanosciences, Nanotechnologies, Materials and new Production Technologies - NMP

- Four calls €292.5 million
- <u>Deadlines:</u> 08-11-2011, 24-01-2012
- Three cross-thematic calls Factories of the Future, Energy Efficient Buildings, and Green Cars - €335 million
- Deadlines: 01-12-2011
- Focus on smart and sustainable growth for a greener industry
- Challenges addressed include:
  - Energy and energy efficiency
  - Environmental issues and sustainability
  - Raw materials
  - Health and safety
  - Factories of the future
  - European energy-efficient buildings
  - Green cars



# Nanosciences, Nanotechnologies, Materials and new Production Technologies – NMP (2)

- Topics of particular interest may include:
  - Total safety management for industrial organisations international cooperation welcomed [Topic: NMP.2012.3.0-2]
  - Support for standardisation needs international cooperation welcomed [Topic: NMP.2012.4.0-2]
  - Advanced magnetic materials international cooperation welcomed [Topic: NMP.2012.4.1-3]
- Other topics in areas of mutual interest may include:
  - Advanced materials for high temperature power development -SICA targeted at Eastern Partnership countries
  - Nanosafety several topics area of mutual EU-Russian interest
  - Biomaterials for medical implants area of mutual EU-Russian interest



## <u>Energy</u>

- Three calls €262 million
- <u>Deadlines:</u> 25-10-2011, 01-12-2011, 08-03-2012
- Focus on implementation plans and road maps of the European Strategic Energy Technology Plan (SET-Plan)
- Aim to accelerate market take up of most promising technologies in:
  - Solar, wind, bioenergy, smart grids, Carbon Capture and Storage (CCS), smart cities
- Topics of particular interest may include:
  - Impact of the quality of CO2 on transport and storage targeted at Russia and other CSLF members [Topic: ENERGY.2012.5.2.1]
- Other topics in areas of mutual interest may include:
  - Biofuels
  - ccs
  - Electricity networks
  - Energy efficiency
  - Urban heating and cooling
  - Future and emerging technologies



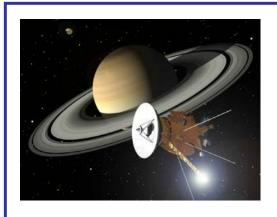
## **Environment**

- Two calls €255 million
- Deadline: 20-10-2011
- Two Cross-thematic calls Energy-Efficient Buildings, Materials for Green Cars
- Deadline: 01-12-2011
- Focus on resource efficiency and climate resilience
- Topics of particular interest may include:
  - Development of advanced techno-economic modelling tools for assessing costs and impacts of mitigation policies [Topic: ENV.2012.6.1-2]
  - Strategies, costs and impacts of adaptation to climate change [Topic: ENV.2012.6.1-2]
  - Operational potential of ecosystems services and natural capital for sustainable land, water and urban management [Topic: ENV.2012.6.2-1]
- Other topics in areas of potential interest may include:
  - Topics relevant to the Marine Strategy Framework Directive (incl Black and Baltic Seas)
  - Earth observation
  - Energy efficiency
  - Resource efficiency indicators
  - Standardisation needs
  - Advancing knowledge on the role of environment on health and well-being in support of a European exposome initiative



## **Transport**

- Seven calls
- <u>Deadlines:</u> 01-12-2011, 01-03-2012, 14-03-2012
  - Aeronautics (three calls € 145 million)
  - Surface Transport (one call € 114 million)
  - Horizontal issues (two calls € 36 million)
  - Cross-thematic (one call €35 million)
- Topics of particular interest may include:
  - Europe to Asia rail research collaboration [Topic: SST.2012.2.5-2]
  - Safety of ships in Arctic conditions [Topic: SST.2012.4.1-2]
  - Innovation for efficient urban bus systems [Topic: SST.2012.3.2-1]
  - Aircraft safety 6 topics [Area: AAT.2012.1.3.3]
  - Operational safety 4 topics [Area: AAT.2012.1.3.4]
  - Integrated approach to safe flights under icing conditions [Topic: AAT.2012.3.5.1]
- Other topics in areas of mutual interest may include:
  - Rail research, ITS and urban transport several topics
  - Vulnerability of European transport systems to extreme weather events/natural disasters



## **Space**

- One call €84 million
- Deadline: 23-11-2011
- Focus in 2012:
  - The development of GMES
     (Global Monitoring for Environment and Security)
    - (Pre)-operational validation of GMES services and products
    - Support to the coordinated provision of observation data
    - Development of earth observation satellites
  - Strengthening the foundations of space S&T
    - Research to support space science and exploration
    - Research to support space transportation and key technologies
  - Cross-cutting activities



## **Space (2)**

- Topics of particular interest may include:
  - Support for emergency response management should target areas inside or outside of Europe [Topic: SPA.2012.1.1-04]
- Or the following topics targeted to countries with an EU S&T Cooperation Agreement
  - GMES Climate change data archiving and exchange [Topic: SPA.2012.1.3-03]
  - Exploitation of space science and exploration data [Topic: SPA.2012.2.1-01]
  - Key technologies enabling observations in and from space [Topic: SPA.2012.2.2-01]
  - Key technologies for in-space activities [Topic: SPA2012.2.2-02]



## Research Infrastructures

- One call € 90 million
- Deadline: 23-11-2011
- Last call in FP7, budget to be supplemented in 2013
- Main <u>lines of action:</u>
  - Support to existing research infrastructures
  - Support to new research infrastructures/major upgrades
  - Support for policy development/programme implementation
- Topics of particular interest may include:
  - Coordination actions, conferences and studies supporting policy development, including international cooperation, for e-Infrastructures [торіс: INFRA-2012-3.3]
  - Biological Resources Centres for micro-organisms [торіс: INFRA-2012-1.1.6]
  - Experimental facilities for animal disease infectiology [Topic:INFRA-2012-1.1.7]
  - Plant Genetic Resources Centres [Topic:INFRA-2012-1.1.10]



## **Ideas Programme**

## **European Research Council (ERC)**

- Starting Grant call 20 July, € 729.98 million, deadlines: 12-10-2011, 09-11-2011, 24-11-2011
  - one Starting Grant = up to €2 million
- Advanced Grant call 16 November, €679.98 million
  - one Advanced Grant = up to €3.5 million
- New Scheme: 'ERC Synergy': October 2011 for very limited number of projects
  - support of small groups of Principal Investigators working jointly on similar research projects, up to € 15 million / grant over 6 years
- <u>Evaluation:</u> single submission of proposal 2 stage evaluation, interviews for some ERC schemes



## **Marie Curie Actions**

- Two calls in July 2011 (ITN and IRSES), deadlines: 12-01-2012, 18-01-2012, six other calls from 19 October 2011 until 13 March 2012 – Total budget ~ € 900 million
- Institutions located in Russia are eligible in the following actions:
  - IRSES: International Research Staff Exchange Scheme
  - ITN: Initial Training Networks;
  - IAPP: Industry-Academia Partnership and Pathways;
  - IOF: International Outgoing Fellowships.
- Researchers from Russia are eligible in all above-mentioned actions (excluding IOF) and in the following actions:
  - COFUND: Co-funding of Regional, National and International Programmes;
  - IIF: International Incoming Fellowships;
  - CIG: Career Integration Grants.

## Конкурсы 2011-2012 гг.

Направление	Дата объявления	Дата закрытия	<b>Бюджет млн €</b>
ITN	20 июля 2011	12 января 2012	423
IRSES	20 июля 2011	18 января 2012	30
IAPP	19 октября 2011	19 апреля 2012	80
IIF	13 марта 2012	16 августа 2012	40
IOF	13 марта 2012	16 августа 2012	40



## International Cooperation in FP7

#### 3 different avenues:

- 1. All activities open for International Cooperation
- International Cooperation Partner Countries (ICPC) can participate in projects and receive EU funding (Russia = ICPC)
- Industrialised countries (~ OECD) may get EU funding if their participation is seen as essential for the project or if provided for in the call
- Minimum number of participants: 3 from MS/AC + ICPC
- 2. Specific International Cooperation Actions (SICA)
- Address specific issues that partner countries face or have a global character, on the basis of mutual interest and benefit
- Minimum number of participants: 2+2 (2 from MS/AC + 2 from ICPC in Russia = 2 regions / Oblasts)
- 3. Bilateral agreements for targeted co-funding
- Individual agreements with specific countries, e.g. Russia



## **International Cooperation**

- Two calls €32 million
- Deadline: 15-11-2011
- Bilateral coordination for the enhancement and development of S&T partnerships (BILAT)
  - Targeted at Argentina, Australia, Brazil, Chile, China, India, Jordan, Mexico, Morocco, New Zealand, Russia, South Africa, South Korea, Ukraine, and USA
- Activities to include:
  - Supporting EU-Russian institutional dialogue
  - Promoting FP and bilateral cooperation, joint activities etc
  - Monitoring progress in bilateral S&T cooperation
  - Supporting FP Contacts
  - Analysing innovation measures, national innovation systems, framework conditions for research and innovation
  - Promoting twinning of research organisations
  - Studying feasibility of establishing a joint European liaison office



# Further Information about current projects facilitating Russian participation in FP7

**EECA INCONET:** www.inco-eeca.net/

ERANET-RUS: www.era.net-rus.eu/

BILAT-RUS: www.bilat-rus.eu/

www.st-gaterus.eu/

ACCESS-RU: www.access4.eu/russia/index.php

#### **Pilot Joint Calls**



http://www.eranet-rus.eu/en/177.php

#### EU – Russia:

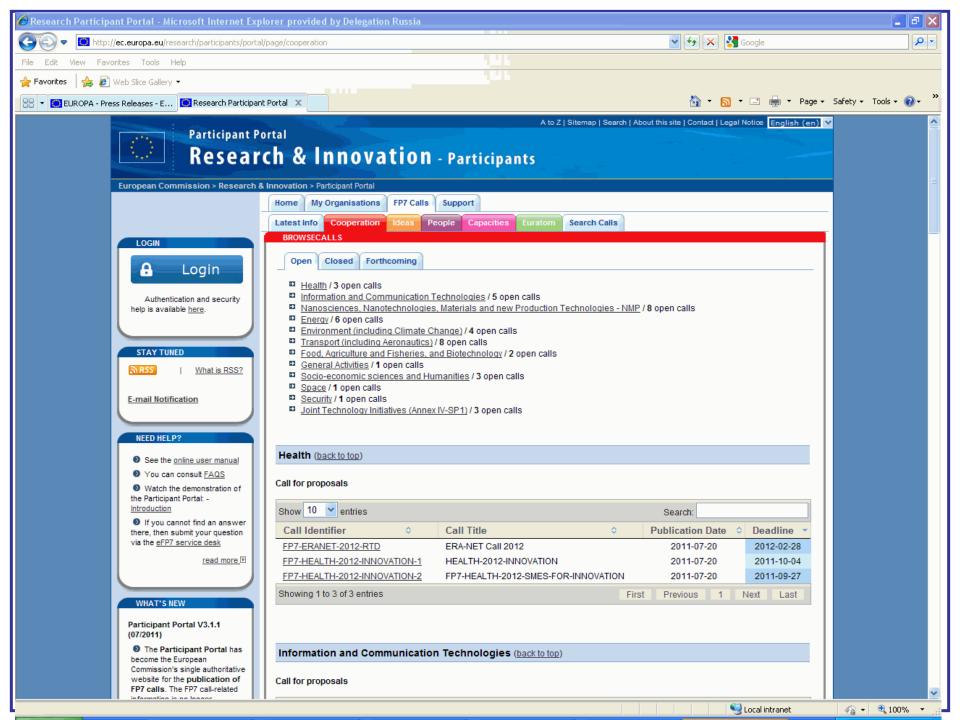
- Joint Call on Innovation, 15/02/2011. Deadline: 15/04/2011 (Germany, Greece, Israel, Russia, Switzerland, Turkey)
- Duration up to 24 months
- The total indicative financial contribution € 2.980.000
- Terms of Reference with National eligibility and funding rules
- Guide for Applicants
- National contact points
- On-line application procedure
- Evaluation criteria & procedure
- Foundation for the Assistance of Small Innovative Enterprises
- List of projects for funding

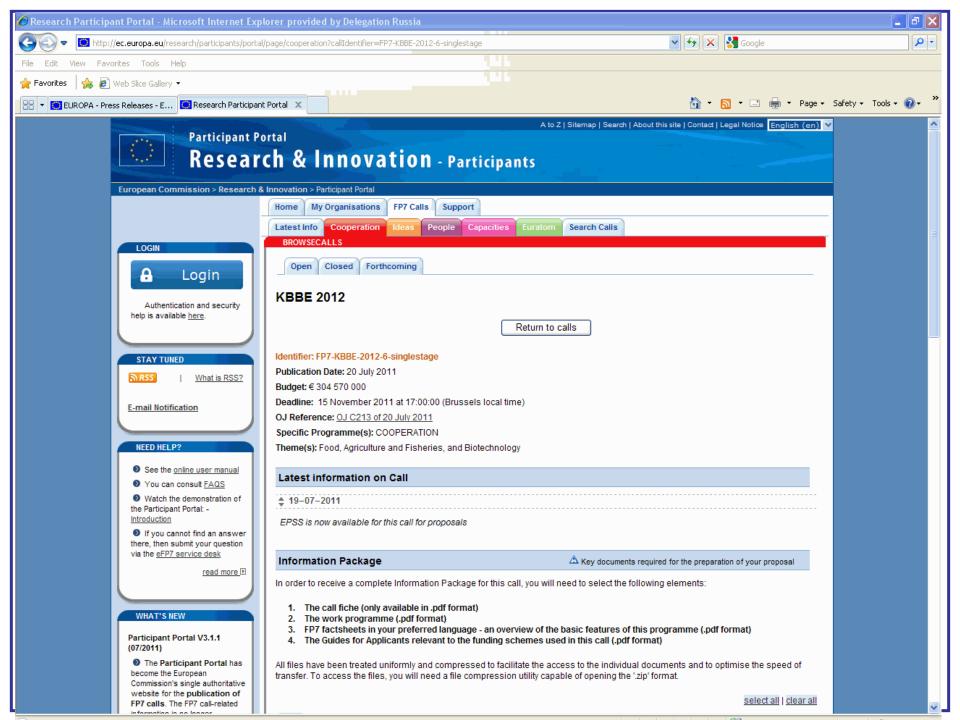
http://www.eranet-rus.eu/en/177.php

## **European Research Information**



- EU Research & Innovation http://ec.europa.eu/research
- Innovation Union http://ec.europa.eu/research/innovationunion/index\_en.cfm
- Seventh Framework Programme http://ec.europa.eu/research/fp7
- | Innovation Union means | Innovation Union |
- FP7 Calls for Proposals and information on research programmes and projects: http://ec.europa.eu/research/participants/portal
- Experts' registration in FP
   https://cordis.europa.eu/emmfp7/index.cfm





## **Europe 2020 Strategy**



## Three key drivers for growth:

- Smart growth
   fostering knowledge, innovation, education, digital society,
- Sustainable growth
   making production more resource efficient, and
- Inclusive growth
   raising labour, acquisition of skills and fight against poverty

3% of the EU's GDP should be invested in R&D (!)

## **Europe 2020 Strategy**



#### **Seven Flagship Initiatives**

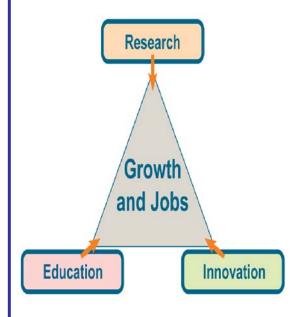
- Innovation Union re-focussing R&D and innovation policy on major challenges
- 2. Youth on the move enhancing quality and int'l attractiveness of Europe's higher education system
- 3. Digital agenda for Europe Digital Single Market based on ultra fast internet
- 4. Resource-efficient Europe shift towards resource efficient / low-carbon economy.
- 5. Industrial policy for green growth
- 6. Agenda for new skills and jobs modernising labour markets
- 7. European platform against poverty



## **Europe 2020 Flagship Initiative**

## Innovation Union

## **Key measures:**



- Strengthening the knowledge base
- Getting good ideas to the market
- Social and territorial cohesion
- European Innovation Partnerships
- International cooperation



# International Cooperation is Key to "Innovation Union"

#### **Key issues**

- Third countries perceive the European Union as 27+1 (EC),
   i.e. 27 individual countries plus EU, not one major partner
- Europe's openness is not always reciprocated
- Global challenges require a global response

#### **Key measures**

- Coordination of priorities European plus 27 Member States for cooperation with third countries (2012)
- Agree on international infrastructures with world partners (2012)

## **Horizon 2020**

# The next Framework Programme for Research and Innovation (2014-2020)

- New, integrated funding system that will cover all research and innovation funding currently provided through:
  - → Framework Programme for Research and Technical Development (FP)
  - → Competitiveness and Innovation Framework Programme (CIP), and
  - → European Institute of Innovation and Technology (EIT)
- Consultation and adoption procedure 2012 2013
- Budget proposed : €80.2 billion

# Thank you for your attention