Proposals and projects in the

Coordinated Call

FP7-ICT-2011-EU-Russia

Information Meeting

Moscow: 21st October, 2010

SEVENTH FRAMEWORK PROGRAMME

European Commission
Information Society and Media

EU-Russia Call

- First ICT Joint Call with Russia (dedicated INCO Call in WP 11-12); joint calls have already been implemented in other areas of FP7
- Russia is investing in High Performance Computing: No 12 supercomputer in the top500 list is Russian; aiming to enter Top3 already in 2010 (Petaflop range)
- Russia has leading academic expertise in a variety of scientific fields that are users of HPC
- EU has leading academic expertise in parallel programming and is home to a dynamic ecosystem of innovative HPC tool companies

Overview of Call

Target outcomes:

a) **Programming Models and Runtime Support**
   - → generic and portable programming models
   - → heterogeneous multicore and accelerator based systems

b) **Performance Analysis Tools for High-Performance Computing**
   - → measurement, analysis, and modeling tools to support hybrid programming
   - → tools targeted towards abstract characterisations of the performance of applications

c) **Optimisation, Scalability and Porting of Codes**
   - → Optimisation and scaling of application codes to thousands of cores
   - → Examples of application domains: Computational Fluid Dynamics, molecular dynamics, electromagnetic, biology, seismic signal processing and remote sensing.

Call: INCO Russia, 4M€ EU + 2M€ Russia,

3 STREPs of 2-years, 1 project per topic

a) Programming Models and Runtime Support

- Programming models to address programmability and portability issues for multicore and accelerator based systems.
  - Work should focus on developing or selecting specifications of generic and portable programming models (e.g. via languages, directives or library APIs) and provide implementations (compilers and runtime support libraries) on heterogeneous multicore and accelerator based nodes.
  - The models should address the integration issues between system level and node level models in hybrid programming styles as well as compatibility between different low level devices (GPUs, FPGAs,...).
  - Includes flexible and efficient mechanisms for synchronization and locality handling.
  - Efforts to evaluate the developed environments in comparison to other alternatives would be desirable.

Expected Impacts

•Improved understanding of the advantages/disadvantages/applicability of programming models.
•Improved programmability of parallel computing systems.
•Increased cooperation between EU and Russian organisations

b) Performance Analysis Tools for High-Performance Computing

- Portable and efficient performance measurement, analysis, and modeling tools to support hybrid programming
  - e.g., mixed MPI/OpenMP/Accelerator both on homogeneous and heterogeneous multicore hardware architectures and accelerators including GPUs and FPGAs.
- Tools should be targeted towards abstract characterisations of the performance of applications hiding the user from the specifics of a given hardware platform from the whole system down to the level of separate low-level units.

Expected Impacts

•The state-of-the-art in hybrid parallel programming methodologies should be significantly advanced.
•Development of tools to support mixed-mode programming and programming of heterogeneous architectures.
•Increased cooperation between EU and Russian organisations

c) Optimisation, Scalability and Porting of Codes

- Optimisation and scaling of application codes to thousands of cores including porting of codes to new (heterogeneous or homogeneous) multicore hardware architectures, using advanced methods, technologies, and tools.
  - Examples include: use of new methods for mesh generation, new solver parallelisation, various forms of task and data parallelisation, utilization of specific accelerators, including GPU and FPGA.
  - Scientific computing domains and application domains are focused on, but not limited to: CFD, molecular dynamics, electromagnetic, biology, seismic signal processing and remote sensing.

Expected Impacts

- The state-of-the-art in optimisation and scalability methodologies should be significantly advanced.
  - ➢ Effective measurements of improved performance and comparison between various types of parallelisation will be valuable.
- Porting of codes to bigger number of cores
- Increased cooperation between EU and Russian organisations

EU Russia Calls

EU Proposal – in English	**RU Proposal – In Russian**
Part A – admin details for EU partners	Part A – admin details for RU partners
Part B: Work of EU partners	Part B: Work of RU Partners
Annex: Summary of work of RU partners	Annex: Summary of work of EU partners
Annex draft Co-ordination agreement	
Consortium agreement	

Specific requirements for coordinated call

FP7-ICT-2011-EU-Russia

- **The FP7 proposal and the proposal submitted to the Ministry of Education and Science of Russia will have different administrative parts. The FP7 proposal shall in the administrative part only cover the participants to the EC proposal and their budgeted costs.**
- **The Russian participants and their costs and budget are described in the proposal to the Ministry of Education and Science of Russia.**
- **The description of the work (part B) will be different for the two coordinated proposals.**

Focused projects (STREPs)

For the EU-RU call

- Purpose: Objective driven research more limited in scope than an IP
- Target audience: Industry incl. SMEs, research institutes, universities

- Typical duration: **24 months**
- Optimum consortium: 3-6 participants
- Total EU contribution: **For this call: MAX: 1.500.000 €**

- Fixed workplan and fixed partnership for duration

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Specific requirements for coordinated call Eligibility Criterion

FP7-ICT-2011-EU-Russia

Any proposal submitted to the European Commission as a response to the Coordinated Call with Russia **must be coordinated** with a proposal submitted to the Ministry of Education and Science of Russia.

Proposals which do not include coordination between the FP7 project and a Russian proposal will be considered ineligible. *(see Annex 2 of Guide for Applicants for this call) .*

Specific requirements for coordinated call Evaluation

FP7-ICT-2011-EU-Russia

To ensure a genuine EU-Russia cooperation, priority in the evaluation will be given to proposals that demonstrate a balanced effort between the two coordinated projects and a research plan properly involving coordinated research activities between Europe and Russia. This will be reflected in the evaluation under the criteria "Impact" and "Implementation"; *(see Annex 2 of the Guide for Applicants for this call).*

Timetable of coordinated call

FP7-ICT-2011-EU-Russia

DATE	EC	RU Min. of ED and SCI
20 July 2010	Publish Call	-
10 November 2010		Publish Call
12 November 2010	Close Call	
6-8 December 2010	Evaluation Brussels	
10 December 2010		Close Call
15-17 December 2010		Evaluation Russia
20-21 December 2010	Finalise List of Proposals	Finalise List of Proposals
21 December 2010	Meeting to Agree Final Common List of Proposals	
28 December 2010		Ready to Sign Contract
End February 2011	Ready to Sign Contract	
1 January 2011	Project Start	Project Start

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