Framework Programme 7

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Whyse

Joining the EU programmes as a Belarusian

1. Introduction to the Framework Programme 7
2. Focus on evaluation issues
   + exercise
3. Strategies for Belarusian organisations
   + exercise
4. **ICT 2011-2012 Work Programme**
5. Information days
6. Main errors in proposals
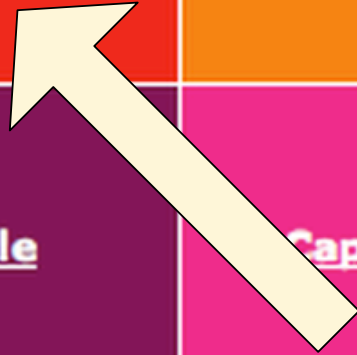
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Cooperation

Ideas

People

Capacities

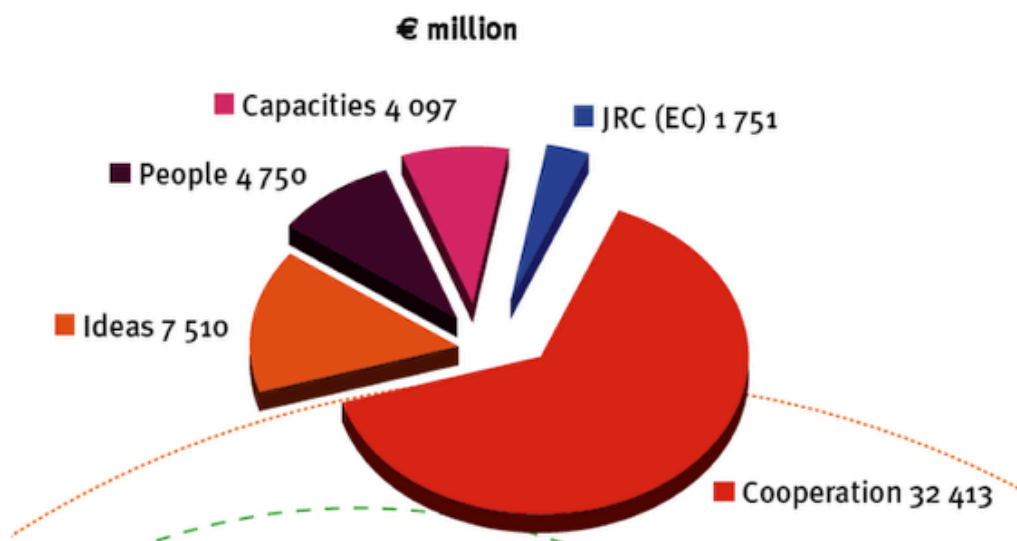## FP7 budget (€ 50 521 million, current prices)

€ million

- Capacities 4 097
- People 4 750
- Ideas 7 510
- JRC (EC) 1 751
- Cooperation 32 413

Note: Euratom FP: € 2.7 billion over 5 years – not included above

ICT 2011-2012

The research challenges in this Work Programme
focus on <u>high-risk ICT collaborative research forming
part of a medium to long-term agenda.</u>

> This presentation is just for your advanced information,
> the work programme is still under consideration

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C1: Pervasive and Trusted Network and Service Infrastructures

✶Future Networks that support the convergence and interoperability of heterogeneous mobile, wired and wireless broadband network technologies, including notably novel Internet architectures; network management and operation frameworks, wireless and broadband broadband systems and ultra-high capacity all-optical networks.

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C1

✴Cloud computing, Internet of Services and advanced software engineering that emphasise technologies specific to the networked, distributed dimension of software and the access to services and data.

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C1

✴Architecture and technological foundations for Internet-connected sensors, actuators and other smart devices and objects, enabling person/object and object/object communications.

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C1

* Trustworthy ICT including security in networked service and computing environments; trust, privacy and claims management infrastructures; and data policy, governance and socio-economic aspects of trustworthy ICT.

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C1

* Networked media and search systems, including digital media delivery platforms, end-to-end immersive and interactive media technologies, and multimedia search technologies.

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C1

* Experimental facilities (known as FIRE) for experimentally-driven research on the Future Internet; the facilities will provide larger scale and diversity to test and validate the developments at closer to reality conditions.

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Cloud Computing (target outcomes)

- Intelligent and autonomic management of cloud resources, ensuring agile elastic scalability. Scalable data management strategies, addressing the issues of heterogeneity, consistency, availability, privacy and supporting security.

- Interoperability amongst different clouds, portability, protection of data in cloud environments, control of data distribution and latency.

- Seamless support of mobile, context-aware applications.

- Energy efficiency and sustainability for software and services on the cloud.

- Architectures and technologies supporting integration of computing and networking environments; implications of Cloud Computing paradigm on networks

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C2: Cognitive Systems and Robotics

C2 focuses on artificial cognitive systems and robots that operate in dynamic, non-deterministic, real-life environments.

Such systems must be capable of responding in a timely and sensible manner and with a suitable degree of autonomy to gaps in their knowledge, and to situations not anticipated at design time.

Actions under this Challenge support research on engineering robotic systems and on endowing artificial systems with cognitive capabilities.

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C2

- a) **Robotic systems operating in real-world environments**: Expanding and improving the functionalities of robotic systems and further developing relevant features, such as autonomy, safety, robustness, efficiency, and ease of use. As appropriate, work will include exploring ways of integrating, in robotic systems, new materials and advanced sensor, actuator, effector and leading edge memory and control technologies.

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C2

- b) **Cognition and control in complex systems**: Enabling technologies based on the acquisition and application of cognitive capabilities (e.g., establishing patterns in sensor data, classification, conceptualisation, reasoning, planning) for enhancing the performance and manageability of complex multi-component and multi-degree-of-freedom artificial systems, also building on synergies between cognitive systems and systems control engineering. This outcome complements Objective 3.3 / target outcome (d).

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C2

- c) Gearing up and accelerating cross-fertilisation between academic and industrial robotics research to strengthen synergies between their respective research agendas through joint industrially-relevant scenarios, shared research infrastructures; joint small- to medium-scale experimentation with industrial platforms and implementation of comparative performance evaluation methodologies and tools.

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C2

- d) **Fostering communication and co-operation between robotics and cognitive systems research communities** through: identification of common interests and areas of co-operation; knowledge sharing between EU, national, and international initiatives; supporting open-source hardware and software developments; updating R&D roadmaps taking account of work under relevant past and ongoing European programmes; addressing issues such as market potential, user acceptance, standardisation, continuing education, ethics, and socio-economic impacts; outreach to relevant professional and general audiences.

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C2

- e) **Speeding up progress towards smarter robots through targeted competitions** based on suitably evolving reference scenarios focused on capabilities at issue under this Objective, and involving relevant stakeholders. This includes soliciting private sponsorships, organising and managing pertinent events as well as accompanying dissemination measures and public relations activities.

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C3: Alternative Path to Component and Systems

- Challenge 3 covers electronic and photonic components, integrated micro/nanosystems, multicore computing systems, embedded systems and their monitoring & control and cooperating complex systems. It complements the developments undertaken in the ENIAC and ARTEMIS JTIs.

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C4: Technologies for Digital Content and Languages

- Digital content is the foundation of a knowledge based society; it is in digital content that knowledge is stored and from digital content that knowledge is extracted and exploited by individuals and organisations across modalities and languages. This makes it crucial for this resource to be readily and reliably accessible over time to European citizens and enterprises and for every step in its lifecycle to be adequately supported and enhanced in response to changes in the technology landscape.

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C5: ICT for Health, Ageing Well, Inclusion and Governance

This challenge addresses advanced ICT research for sustainable high-quality healthcare, demographic ageing, social and economic inclusion, and the governance of our societies. The Challenge covers the following:

− PHS research that aims for disease management and also targets rehabilitation and treatment at the point of need with a focus on specific diseases.

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C6: ICT for a low carbon economy

This Challenge explores how ICT can contribute to deliver a sustainable, low carbon society and help progressing towards the EU 2020 targets on climate and energy. ICT can assist in reshaping the demand side of our energy-dependant society, reducing energy consumption, and subsequently carbon emissions, in particular in energy distribution, buildings and construction, transport and logistics, the public sector, urbanrural areas and cities.ICT can be exploited to conserve our natural resources and in particular reduce our dependence on those natural resources which are non-renewable. It also addresses the use of advanced ICT to help meet the challenges of European Transport Policy, especially regarding decarbonisation of transport. The Challenge focuses on the following:

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C7: ICT for the Enterprise and Manufacturing

The Factories of the Future (FoF) initiative is part of the European Economic Recovery Plan launched in November 2008 to respond to the global economic crisis. This Public-Private-Partnership (PPP) aims at helping EU manufacturing enterprises, in particular SMEs, to adapt to global competitive pressures by improving the technological base of manufacturing across a broad range of sectors. The ICT contribution to this initiative aims at improving the efficiency, adaptability and sustainability of manufacturing systems as well as their better integration within business processes in an increasingly globalised industrial context. Challenge 7 is fully dedicated to supporting the FoF PPP.

C7

The Challenge includes the areas:

- 'Smart factories' including application experiments of control and sensor-based systems, laser systems and industrial robots.

- 'Manufacturing solutions for new ICT products' addressing manufacturing processes for Organic Large Area Electronics (OLAEs) and organic photonics.

- 'Virtual factories and enterprises' addressing end-to-end integrated ICT allowing for innovation and higher management efficiency in networked operations and supporting the emergence of 'smarter' virtual factories and enterprises.

C8: ICT for learning and Acces to Cultural Resources

The challenge addresses the need for flexible and efficient access to information and knowledge, for educational, training and cultural purposes. It focuses on advances in how we learn through ICT and on enhancing the meaning and experiences from digital cultural and scientific resources. It responds to societal (active and responsible learners) and economic needs of individuals and organisations (better skilled and creative workforce).

Research under this Challenge will fuel progress in a wide range of applications from schools to workplaces, museums, libraries and other cultural institutions. Individual personal spheres are being extended by advances in areas like pervasive network environments, social networking technology and mobile computing, rising the expectations of users and consumers of the digital learning and cultural resources in terms of level of interaction and engagement.

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C9: Future and Emerging Technologies

Future and Emerging Technologies (FET) fosters exploratory research to open up new avenues across the full breadth of future information and communication technologies. It supports new and alternative ideas, concepts or paradigms of risky or non-conventional nature. FET aims to go beyond the conventional boundaries of ICT and ventures into uncharted areas, often inspired by and in close collaboration with other scientific disciplines.

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C10: International cooperation

Objective ICT-2011.10.1 EU-Brazil Research and Development cooperation

    Topic 1: Microelectronics/Microsystems

    Topic 2: Networked Monitoring and Control Systems

    Topic 3: Future Internet - experimental facilities

    Topic 4: Future Internet - security

    Topic 5: Future Internet - e-Infrastructures

Objective ICT-2009.10.2 EU-Russia Research and Development cooperation

    (a)   Programming Models and Runtime Support

    (b)   Performance Analysis Tools for High-Performance Computing

    (c)   Optimisation, Scalability and Porting of Codes

Objective ICT-2011.10.3 : International partnership building and support to dialogues

    a)   Support to dialogues with strategic partner countries and regions, to create cooperative research links between European organisations and partners in third countries

    b)   Enable Partnership building in low and middle income countries

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C11: Horizontal Action

- **Objective ICT-2011.11.1 Pre-Commercial Procurement Coordination Actions**

- **Objective ICT-2011.11.2 Trans-national co-operation among National Contact Points**

- **Objective ICT-2011.11.3: Supplements to Strengthen Cooperation in ICT R&D in an Enlarged European Union**

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			Call 7	Call 8	Call 9		
1. Pervasive and Trusted Network and Service Infrastructure	**625**						
1.1 Future Networks	160			160			
1.2 Cloud Computing, Internet of Services and Advanced Software Engineering	70			70			
1.3 Internet-connected Objects	30		30				
1.4 Trustworthy ICT	80			80			
1.5 Networked Media & Search Systems	70		70				
1.6 Future Internet Research and Experimentation (FIRE)	45		20	25			
1.7 PPP FI: Technology foundation - Future Internet Core Platform	41	41					
1.8 PPP FI: Use Case scenarios and pilots	107.5	40				67.5	
1.9 PPP FI: Capacity Building and Infrastructure Support	15.5	3				12.5	
1.10 PPP FI: Programme Management and Support	6	6					
2. Cognitive Systems and Robotics	**155**						
2.1 Cognitive Systems and Robotics	155		73		82		

Call 7 end September 2010 approx. 800 million euro
Call 8 end July 2011 approx. 800 million euro
Call 9 end November 2011 approx. 300 million euro

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End

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