Identified Courses of Action for a More Effective Research Cooperation between *EU-Belarus* and *EU-Ukraine* in the ICT field

April 2011

Preface

Title:	*"Strategic Cooperation in Ukraine, Belarus and EU in Information and Communication Technologies" (Contract No 231148)*
Duration:	*January 1, 2009 – December 31, 2010 (24 months)*
Website:	*http://www.scube-ict.eu , http://www.eeca-ict.eu*
Coordinator:	*International Environment and Quality Services North Greece Ltd (Q-PLAN N.G., Greece, www.qplanng.gr)*
Project Overview:	**SCUBE-ICT** was an innovative EU funded initiative aiming to upgrade the cooperation in the field of Information and Communication Technologies (ICT) between EU, Belarus and Ukraine in key areas of mutual interest in order to create substantial socio-economic benefits in all three regions. Its mission was threefold: (i) To assess in detail the potential for ICT R&D co-operation between the EU, Belarus and Ukraine; (ii) To substantially increase the number of ICT R&D collaboration cases between EU, Belarusian and Ukrainian R&D organisations; and (iii) To facilitate ICT R&D policy dialogues between the EU, Belarus and Ukraine.
EECA region:	The Eastern Europe and Central Asia (EECA) region includes the following 12 countries: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan
EECA Cluster:	The **East Europe and Central Asia (EECA) cluster** (www.eeca-ict.eu) was formed in January 2009 between the SCUBE-ICT, EXTEND (www.extend-ict.eu) and ISTOK-SOYUZ (www.istok-soyuz.eu) projects to enhance the research collaboration between ICT actors from EU and the entire EECA region. SCUBE-ICT was one of the major contributors of EECA Cluster and responsible for the development of multiple of its current assets presented in this document.

IDENTIFIED COURSES OF ACTION FOR MORE EFFECTIVE RESEARCH
COOPERATION BETWEEN EU, BELARUS AND UKRAINE IN THE ICT FIELD

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Introduction

The current document outlines the SCUBE-ICT key findings on the collaboration potential and the main courses of action that could lead to a more effective cooperation in Information and Communication Technologies (ICT) research between EU-Belarus and EU-Ukraine. More specifically:

- ✓ **Chapter 1** contextualises the process, methodology and actors involved to assess the collaboration potential between EU and Belarus/Ukraine, the ICT research areas of mutual interest, identify the key cooperation barriers, and finally, conclude on specific courses of action that if followed could lead to a more effective cooperation in ICT research.

- ✓ **Chapter 2** provides an overview of the key barriers identified that hinder EU-Belarus and EU-Ukraine collaboration in ICT research. The identification of those barriers was based on a comparative assessment of strategic key policy and programme documents at both EU and national level, as well as on in depth interviews with key ICT RTD stakeholders in Belarus and Ukraine (i.e. state actors involved in the shaping of national ICT policies and in developing / implementing ICT RTD programmes as well as key representatives of the ICT research and business communities).

- ✓ **Chapter 3** concludes on specific recommended courses of action that could substantially enhance the cooperation with EU in ICT research, if adopted. To better explain the potential impact of each action, those are mapped with the specific barriers they are targeting to address, while the actor(s) involved and a suggested time frame (short-to-medium or medium-to-long term action) are also indicatively provided. Indeed, those comprise the outcome both of the assessment analysis as well as of the discussions with the key representatives of the two state authorities as well as the ICT research and industrial communities of the two countries during two highly representative policy workshops organised in both countries.

- ✓ Finally, **Annexes** provide **(i)** a cross-reference table that links recommended courses of actions vs. barriers, timelines and actors involved, **(ii)** the ICT research areas of mutual interest identified between EU-Belarus and EU-Ukraine respectively, and the key actors involved both in the **(iii)** consultation process as well as in the **(iv)** policy activities towards the assessment of cooperation potential as well as on the recommended courses of action that could substantially lead to a more effective cooperation in ICT research.

The document is also available for download at www.eeca-ict.eu/eeca/index.php/en/usefulinfo/eu-eeca-collaboration-potential.

1. Process, methodology and actors involved

To assess the collaboration potential between EU and Belarus and Ukraine – key ICT research areas of mutual interest – identify the key cooperation barriers and conclude on specific courses of action that if followed, could lead to a more effective cooperation in research, a three step approach was followed:

Step 1: Analysis of the national ICT sector and its governance in Belarus and Ukraine

The objective was to examine the current status and future trends of the ICT sector in both countries, its governance system and relevant national policies and priorities in order to:

- ✓ Identify the *strengths and weaknesses* of the ICT sector at both research and business level, while highlight *emerging opportunities and potential threats* for its development in both countries;

- ✓ Map key Belarusian/Ukrainian ICT policy priorities, measures and research sub-areas of key interest with those of the EU to identify common challenges, needs and potential collaboration areas where mutual benefits can be generated for both regions;

- ✓ Analyse the socio-economic factors and trends that influence ICT needs and ICT policy priorities in Belarus and Ukraine;

- ✓ Identify the barriers for enhanced cooperation in ICT research between EU and Belarus/Ukraine research teams and the private sector; and

- ✓ Conclude on a set of *preliminary recommendations* to address existing barriers for a more effective EU-Belarus and EU-Ukraine cooperation in ICT research.

The analysis was based on *literature review* as well as on *in depth interviews with key ICT RTD stakeholders in Belarus and Ukraine* (i.e. state actors involved in the shaping of national ICT policies and in developing / implementing ICT RTD programmes as well as key representatives of the research and business communities). In addition, a comparative assessment of strategic key policy and programme documents at both EU and national level took place targeting to reveal similarities, differences and areas of mutual interest.

The analysis concluded on a set of *preliminary recommendations* that were classified per level of importance to strategic (medium-to-long term) and operational (short-to-medium term)) as well as per different target group involved (i.e. research community, private industry and government) in each region (namely in Belarus/Ukraine and in EU).

The *key findings* and *preliminary recommendations* were summarised in the respective "*National ICT Sector and Policy Appraisal*" reports, which constituted the *main background documents both for the consultations* (i.e. consultation questionnaire and workshops) as well as for *the policy workshops* that took place in both countries.

Remark: the "National ICT Sector and Policy Appraisal" reports are publicly available at:

- ✓ http://www.eeca-ict.eu/eeca/index.php/en/usefulinfo/national-reports/doc_download/7-belarus-national-ict-sector-a-policy-appraisal-report (for Belarus)

- ✓ http://www.eeca-ict.eu/eeca/index.php/en/usefulinfo/national-reports/doc_download/8-ukraine-national-ict-sector-a-policy-appraisal-report (for Ukraine)

Step 2: Organisation of well-focused consultations in Belarus and Ukraine

The primary objective of these consultations was to obtain the views of the key national ICT stakeholders (i.e. governmental, research and industrial actors) on the current and future ICT R&D priorities in each country for the period 2010-2015. These are deemed to reflect the actual R&D capacities and potential in the ICT area, meet the technological / industrial trends, and address the key socio-economic needs of the country.

To achieve these objectives, the following actions were carried out:

1. *Creation of a panel of experts in each country*. The consultation targeted those key stakeholders that either influence or are influenced by the development of new ICT RTD policy(ies) and/or programme(s), namely:

   - *policy/decision makers and programme managers, authorities promoting cooperation with EU* such as representatives of relevant ministries, policy advisors and regulatory authorities, EU delegations in both countries, EU Twinning Programme administration office, Joint Technical secretariat for cross border cooperation;

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for Research in the Information and Communication Technologies area (ICT)*

- *knowledge producers and users*, namely representatives of R&D organisations both from the public (e.g. universities, research institutes and centres, etc) and the private (i.e. IT companies with RTD activities) sector; and

- *Organisations that promote and support the development of the IT sector*, such as representatives of IT associations, techno-parks, NGOs and consultancies, etc).

A broad panel of expert stakeholders in each country was formed, ensuring representation of all target groups and taking into consideration the stakeholders: (i) personal experience and expertise, b) his/her position in the organisation (e.g. director of the IT company, head of the research unit, deputy/assistant minister, head of national agency responsible for ICT RTD, etc), and c) the role and importance of his/her organisation in the national ICT landscape in which he/she is engaged in.

2. *Preparation and distribution of consultation documents.* To obtain the experts' opinion on the future ICT research fields and priorities in their country, the following documents were prepared and distributed to them:

- A concise overview of the ICT research environment in the country with specific facts and summarised information as well as the "*National ICT Sector and Policy Appraisal*" reports;

- The ICT research priorities at EU level, as they are reflected in the FP7-ICT workprogrammes; and

- A scoping questionnaire to collect information from the experts on the current and future ICT research priorities in each country for the period 2010-2015 (based on sound justification) and define specific research objectives and proposed areas of research.

3. *Analysis of experts' feedback.* The experts' feedback was synthesised and analysed to elaborate the integrated list of research priorities, objectives and thematic areas in each country and prepare a preliminary set of areas of common interest for EU-Belarus and EU-Ukraine cooperation in ICT research for the period 2010-2015 (the FP7-ICT taxonomy was used as a basis for the comparative analysis).

4. *Organisation of consultation workshops* (11/3/2010 in Minsk, Belarus and 31/3/2010 in Kiev, Ukraine) aiming to present the synthesis of the experts' opinion and discuss, validate, conclude on and prioritise a final list of areas of mutual interest for EU-Belarus and EU-Ukraine cooperation in the ICT research for the period 2010-2015. These areas are presented in ANNEX II of the present document.

Step 3: Organisation of the policy workshops in Belarus and Ukraine

The scope of the policy workshops was to offer a discussion forum to conclude on potential courses of action that if followed could adequately address cooperation barriers and lead to a more effective cooperation in ICT research between EU-Belarus as well as EU-Ukraine.

The workshops targeted those involved in the consultation process as well as additional key national ICT stakeholders that could contribute to the discussions and validate / enrich the preliminary recommended actions (identified during Step 1) to enhance cooperation.

To facilitate the discussions, a background document was elaborated and distributed to the invited ICT national stakeholders before each workshop. It was comprised of:

- The key findings on the collaboration potential between the EU and Belarus/Ukraine (Step 1), namely the identified cooperation barriers and the preliminary recommended actions to address them and enhance cooperation; and

- The identified ICT research areas of mutual interest for EU-Belarus and EU-Ukraine for the period 2010-2015 (deriving from the consultation process – Step 2).

During the policy workshops, the presentation of the current status of the national ICT sector as well as the cooperation potential with EU, the existing barriers and the potential countermeasures to address them (preliminary recommendations), were followed by an open discussion, where the high level participants (evident from their leading position in key governmental, research and business organisations, as well as on their long experience in international cooperation) expressed their views and exchanged their experiences and ideas on how to strengthen the cooperation with EU. Discussion concerned the several practical problems that the research and industrial communities in both countries face when attempting to be involved in EU funded research activities. Concrete actions were suggested by the participants towards all levels of stakeholders that are involved in the ICT research cooperation with EU, namely those that shape relevant policies and programmes at national and EU level as well as those involved in and benefit from international cooperation (the research and business organisations). As a result, the two ICT policy workshops concluded on a final set of *"identified courses of action for more effective research cooperation with EU"*. These actions are presented in Chapter 3 later in this document.

2. Overview of key barriers

2.1 Barriers affecting EU-Belarus cooperation in ICT research

The main barriers hindering cooperation in ICT research between European and Belarusian research and industrial communities are highlighted in the following table:

	Main barriers for EU-BELARUS cooperation in ICT research
B1	Limited cooperation in ICT research between Belarus and Europe. Limited awareness of the Belarusian leading ICT research teams.
B2	Lack of international mobility of Belarusian researchers, especially of the young ones.
B3	Lack of ICT related technology-transfer activities between Belarusian universities / research organisations and European private industry.
B4	Lack of awareness amongst Belarusian ICT research groups of the FP7-ICT programme and lack of understanding and skills on how to effectively participate in FP7-ICT research projects.
B5	Lack of awareness in Europe of the strengths of the Belarusian ICT sector, as well as the potential technical and economic benefits of cooperation with Belarusian ICT companies (including IT outsourcing)
B6	Lack of experience in ICT policy development, monitoring, evaluation and impact assessment based on standardised ICT indicators. Only recently (end of 2010) the country developed an ICT policy monitoring system (called ESPRIO), consisted of a unified system of indices.
B7	Withdrawn, or reduced, international support for science and technology cooperation with Belarus (e.g. Belarus cannot participate in the US' CRDF programme and Swiss SCOPES programme, which include other former Soviet countries. Similarly, Germany and Poland have lowered their support for bilateral S&T programmes).

Overall, ICT gradually turn to become an important enabler for the improvement of the economy of Belarus and the country is already targeting to build a modern information society by becoming a part of the global information community. The country's strength in ICT sector is rooted in its mature technical infrastructure and reputable educational system inherited from Soviet times when Belarus was a major scientific pole. An effective educational system has been preserved and the scientific, technical and production potential in the field of informatics of the country remains relatively high[1]. Belarusian R&D organisations have developed technical infrastructures such as supercomputers and computer systems for different medical applications, as well as for space technologies, nanotechnologies, photonics etc. However, the EU-Belarus cooperation potential remains to a large extend still unexploited.

Over 50% of international projects involving Belarusian organisations are performed by Belarusian higher education institutions and there is a continuous increase in the scientific-industrial cooperation of Belarusian universities with foreign partners (during the past 5 years, the number of such cooperation agreements has virtually doubled). In total, Belarusian universities have partnerships with universities from 57 countries. However, only 5% of Belarusian universities are involved in ICT research with EU partners. This is evident from the low (compared to the scientific excellence that exists in the country) participation of Belarusian research organisations in the European Commission's framework programmes within the last decade: besides several accompanying measures/support actions, there has only been a small number of IST/ICT research projects involving Belarusian higher education institutions. In addition, the discussions with Belarusian researchers on the EU instruments that support international cooperation, revealed a lack of information on both the programmes and the procedures that apply.

In parallel, according to official data and experts' opinion there are about 450-500 companies and informal development teams engaged in software development in Belarus, while only 20-25% are cooperate with business partners in EU in areas like outsourcing, licensing, production and service provision. The establishment of the Hi-Tech Park in 2005 provided a favourable environment for software companies (e.g. tax benefits and 'national branding') to increase their international footprint. However, there is still a rather low awareness in EU of the potential benefits of cooperation with Belarusian software companies, despite their competitive advantages, such as territorial and cultural proximity in their main customers/partners in Europe, the high qualification of programmes and the relatively low cost comparing with other Central European countries.

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[1] K. Datlikovich, I. Tavgen "Promoting ICT for Development in Belarus":
http://europeandcis.undp.org/governance/show/67F101C0-F203-1EE9-B6260AA10E7BF8DB.

At policy level, the analysis of the national ICT sector revealed that different government organisations are responsible for different areas of ICT policy making, while the implementation of relevant ICT policies takes place through dedicated ICT programmes. Despite the considerable budgetary funds that have been invested in ICT development over the last 15 years, the desired impact on social and economic development as well as efficiency improvements in state institutions has not been fully reached. Currently, reviews of specific ICT sectors and policies are carried out on a departmental level and are not open to independent expert evaluation and qualitative examination of programmes and projects. Consequently, up to now, ICT policy has not been considered as a subject requiring concise research, benchmarking and impact assessment on a governmental level. In addition, most of the State programmes have independent and complex objectives, different methodical and information bases and weakly correspond with each other. Consequently, it is difficult to compare and evaluate their integrated contribution to national social and economic development.

Furthermore, regarding the international cooperation, an "Agreement on Co-operation in Science and Technology" with the EU is still pending by the EU side, while the exchange of experiences in the field of formation, realization and management of state ICT policy at the moment it is in a nascent condition and limited to rare study trips of individual ministry heads. As a result, state stakeholders involved in ICT policy formulation, implementation and evaluation have limited possibilities to take advantage of the global experience in this area (with the exemption of representatives of scientific organisations that are quite actively involved in cooperation with scientific centres of Europe in the framework of international projects and international conferences).

However, considerable changes are currently underway. Overall, more and more attention is paid to studying global experience in the formation and realization of ICT and innovation policy. In 2010 the *United Nations Economic Commission for Europe* (www.unece.org), has made a participatory policy advisory exercise (undertaken at the request of the Government of the Republic of Belarus) and developed "*The Innovation Performance Review of Belarus*"[2], aiming to provide a set of recommendations and policy options to stimulate innovation activity in the country, enhance its innovation capacity and improve the overall efficiency of the national innovation system. The close collaboration with the national authorities and other Belarusian experts throughout the project helped in identifying issues of practical importance to policy makers and ensuring the relevance of the Review conclusions and recommendations to national circumstances. The assessments and recommendations presented in the Review will serve the identification of areas in which capacity-building activities can yield greater benefit, thus providing a solid basis for future work in this direction.

In addition, it is already recognised as key requirement for the development of information society the need for increased cooperation and coordination among the governmental bodies as well as with all concerned sides – research, business, civil society, regional and international organisations. Finally, the completion of the unified system of indices (called ESPRIO) for the monitoring and evaluation of the ICT development in the country as well as the rest of the related new strategies and actions are expected to upgrade considerably the policy benchmarking and evaluation practices and hopefully facilitate more effective ICT policy making and implementation processes in the country.

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[2] http://ictt.by/rus/Portals/0/Innovation_Performance_Review_Belarus_2011.pdf

2.2   Barriers affecting EU-Ukraine cooperation in ICT research

The main barriers hindering cooperation in ICT research between European and Ukrainian research and industrial communities are highlighted in the following table:

Main barriers for EU-UKRAINE cooperation in ICT research	
U1	Lack of awareness in Europe of the Ukrainian leading ICT research groups.
U2	Lack of ICT related technology-transfer activities between Belarusian universities / research organisations and European private industry.
U3	Lack of awareness amongst Ukrainian ICT research groups of the FP7 ICT programme and lack of understanding and skills on how to effectively participate.
U4	Lack of awareness in Europe of Ukraine as an IT outsourcing centre. Highly fragmented IT outsourcing market which lacks national "branding" and export promotion support from the Ukrainian authorities.
U5	Lack of an efficiently operating ICT techno-park / business incubator (e.g. like the techno-park in the Institute of Semiconductors, Kyiv)
U6	Lack of governmental ICT policy monitoring system based on standardised, internationally recognised ICT indicators/statistics. Lack of experience in ICT policy development, monitoring, evaluation and impact assessment based on standardised ICT indicators.
U7	Lack of a national ICT research strategy.

Information and communication technologies (ICT) play an essential role in the Ukrainian Economy having an increasing positive impact on economic development. Overall, there have been major improvements in the ICT sector performance in Ukraine during the last decade, while it is one of the fastest developing sectors of the country and, thus, it offers a good collaboration potential with EU both at RTD and business level.

At research and industrial level, Ukraine is on the verge of important reforms. A strong ICT related education and research feature is evident: a large number of highly qualified specialists in ICT, mathematics, and cybernetics are trained within Ukrainian universities and high level of scientific research is being carried out in a wide range of ICT fields, while considerable IT-infrastructure exists in specific areas (e.g. supercomputers and computer systems for medical applications have been deployed in many Universities, research centres and institutions). In contrast, the Ukrainian business ICT sector is dominated by state-owned or state-adjacent enterprises, creating a difficult environment for new companies (and especially for Small and Medium sized Enterprises) that are not state-owned. The situation is hindered by the absence of tax incentive schemes to facilitate their participation in ICT Research and Development (R&D) activities. In addition, formal rules complicate the access of the private ICT sector to national financial sources for ICT RTD. Consequently, *non state-owned private companies have a limited agenda for research*.

Furthermore, the regulation of the ICT sector and ICT research policy falls under several actors (i.e. committees and organisations) which operate under the supervision of the Ministry of Infrastructure and the Ministry of Education, Science, Youth and Sports. However, there is no clear distinction between the national bodies who *design* ICT policy and those that *implement* ICT policy. Instead, authority is split between a number of legislative and executive branches, while local and regional authorities can develop their own programmes and ministries can work out branch programmes and ICT projects. As a result, actions are not sufficiently coordinated, and the funding available to address the demands for information society development and to improve Ukraine's competitive ICT position is considered insufficient.

Moreover, there are currently no special mechanisms for appraising the impact of policy and regulatory proposals on ICT performance in the country. Actually, the evaluation of national ICT policy is captured in an annual report issued by the Cabinet of Ministries to the Parliament of Ukraine and is an element of accountability for the executive authorities to the legislative authorities. However, the statistical data used for the monitoring of the ICT sector development are still insufficient to build a modern view on information society development, despite the fact that monitoring was first started in 1998 with the preparation of relevant governmental reports about the level of informatization in Ukraine. Consequently, the main value of the reports is the *qualitative* information that they provide.

However, *the situation is expected to change* in the following years as Ukraine demonstrates great interest to learn from European and global experience in ICT development at all levels, starting from state structures to organizations and institutions. For example, close collaboration has been established with international organisations to exchange experiences and concerns on developing a clear and

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standardized methodology for designing ICT policy[3], while an "Agreement on Co-operation in Science and Technology" with the EU and the "bilateral EU-Ukraine European Neighbourhood Policy Action Plan" has been signed facilitating the respective collaboration.

2.3 Similarities and differences in identified barriers for Belarus and Ukraine

The analysis of the national ICT sector in Belarus and Ukraine as well as the assessment of their cooperation potential with EU in ICT research, revealed a number of similarities on the cooperation barriers in both countries. More specifically, despite the scientific capital and expertise that exists in both countries in various ICT areas (e.g. supercomputing, micro/nano electronics, e-applications, etc) and the competitive advantages that both countries exhibit as attractive outsourcing destinations, the collaboration potential with EU is not sufficiently exploited. The participation of Belarusian and Ukrainian research teams in EU funded activities under the Framework Programmes is limited. The main reasons for this situation are the low awareness in EU about the competencies of the Belarusian and Ukrainian research teams and the lack of information on the EU programmes and initiatives that support international collaboration as well as the necessary skills to exploit these programmes/initiatives. In addition, even though both countries has recently established a unified system of indices for the monitoring and evaluation of the ICT development, positive results are not evident yet and there is a great need for cooperation with EU Member States in transferring know-how and good practices.

Meanwhile, there are a number of different 'problems' each country is facing in order to further exploit their cooperation potential with EU in ICT research. For example, even though the Hi-Tech Park in Belarus was established only in 2005, it managed to attract a respectable number (around 25%) of the total of software development companies and its operation is starting to demonstrate positive results. In contrast, Ukraine has a rather poor record in this area. Since 1999, 16 techno-parks were created on the basis on leading institutes of the National Academy of Sciences offering tax and customs privileges, but as of 2005 only half of them remain operational and only 2-3 may be considered as successful examples but are not focusing on the ICT field.

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[3] Ukraine started to use some *e-indexes* in order to conduct international benchmarking with other countries following the "World Summit on the Information Society" in Tunis (2005). However, the use of indexes is not systematic and depends on the scope and regularity of the benchmarking exercises ordered or performed.

3.   Identified courses of action

Taking into account the analysis that took place at national level, the consultation as well as the policy dialogue outcomes that involved the key ICT stakeholders of each of the two countries, ***a final set of "identified courses of action for more effective research cooperation with EU"*** has been concluded and proposed in the form of specific recommendations.

- **Rec. #1: Launch SICA Call(s) for proposals on areas of mutual interest.**

From the analysis of the ICT sector in Belarus and Ukraine it is evident that despite the scientific excellence that exists in both countries their involvement in EU funded activities (e.g. under the various Framework Programmes) is rather limited. Even though participation is, in general, open to any organisation from countries outside the European Union (including Belarus and Ukraine), research teams from these countries are sometimes reluctant to make such a considerable 'investment' that in many cases has so limited chances of success, either due to the very strong competition that exists in the European Calls for ICT research proposals (e.g. FP7-ICT calls) or, mostly, due to the limited knowledge that Belarusian and Ukrainian research teams have on the FP7 rules for participation as well as EU teams on the Belarus and Ukraine expertise. As a result, besides promoting their competencies in EU and enhancing their awareness and skills towards FP7-ICT activities, the **launch of collaborative Calls for *Specific International Cooperation Actions (SICA)*** (including Belarus and Ukraine as the targeted countries), will offer a unique opportunity to support the integration of ICT RTD actors from those countries into European research programmes.

Such Calls ensure the involvement of local research teams, as their participation is a prerequisite (i.e. an eligibility criterion) for any submitted proposal and, thus, provide them with the necessary motivation to get networked with their EU counterparts and actually get involved in FP-ICT activities. Meanwhile, by working closely together for a period of 2-3 years ('typical' duration of a small-scale research project), the partners from both regions will experience the benefits of such collaboration, jointly advance scientific knowledge in areas of common interest and thus, prepare the ground for a future more sustainable cooperation.

Suggested time frame: medium to long term (e.g. FP7-ICT Calls 8 and 9 and other Calls within 2013, as well as under FP8-ICT).

Actors involved: the European Commission is responsible to set the requirements for participation in EU-funded activities, while the timing and areas of mutual interest should be discussed and agreed in cooperation with the targeted countries (i.e. Belarus and Ukraine).

Barrier(s) addressed: B1, B2, B3, B7, U1 and U2.

- **Rec. #2: Launch of ERA-Net project(s) to facilitate the exchange of experiences & knowledge transfer.**

ERA-NET actions provide a framework for actors implementing public research programmes to coordinate their activities e.g. by developing joint research activities or by mutually supporting joint calls for trans-national proposals. The potential implementation of joint calls (even at a later stage) between the involved EU Member States and Belarus - Ukraine, is expected to open a new window of opportunity for cooperation in ICT research between the respective EU and local ICT research actors. Such initiatives already constitute a 'proven' successful collaboration instrument both within EU as well as between EU and internationally. Consequently, ERA-NET(s) could offer to the Belarusian and Ukrainian state authorities responsible for the shaping of the national ICT RTD policies and programmes a unique opportunity to work together with their counterparts from EU Member States (as they had already gone through the process of 'integration into the ERA' in the near past), learn from their experiences and transfer knowledge and good practices on *Shaping national research agendas and programmes.* Coordination with and cross-checking of the national strategies and programmes at both EU and EU Member States level is also expected to help Belarusian and Ukrainian programme 'owners' and 'managers' to take advantage of, in some cases, thoroughly detailed and well-deployed national ICT strategies and programmes and thus, gain valuable knowledge.

It should be mentioned that the example of Ukraine that has already signed an "Agreement on Co-operation in Science and Technology" with the EU and a "bilateral EU-Ukraine European Neighbourhood Policy Action Plan" has already set the foundations for an enhanced EU-Ukraine cooperation in ICT research. However, the implementation of initiatives such as those proposed at this point (i.e. ERA-NETs) could lead to a much closer cooperation with the respective authorities of the involved EU Member States and thus, help speed up the cooperation both at ICT research as well as industrial level.

Suggested time frame: Medium to long term.

Actors involved: the European Commission is responsible to launch such initiatives, while the Belarusian and Ukrainian state authorities should coordinate their efforts with their counterparts from EU Member States involved in respective initiatives.

Barrier(s) addressed: B6, U6 and U7.

- **Rec. #3: Launch of twinning project(s) with authorities of EU Member States that possess considerable experience on national ICT policy monitoring systems and support structures**

Twinning project(s) between authorities of Belarus and Ukraine and those of EU Member State(s) could concern the following topics:

- *The building and running of the national ICT policy monitoring and evaluation system* – namely, to complement the respective activities that has already been undertaken by the Belarusian and Ukrainian governments. Know-how transfer on such system will assist the policy makers of both countries in acquiring valuable knowledge on setting up and running the respective mechanism(s) (based on international standards) for appraising the impact of ICT policy, suggest regulatory proposals on ICT performance in the country and monitor the developments in the ICT sector. For example, Ukraine has already started to use some e-indexes in order to conduct international benchmarking with other countries following the "World Summit on the Information Society" in Tunis (2005), but until now the use of indexes is not systematic and depends on the scope and regularity of the benchmarking exercises ordered or performed. Similarly, Belarus has recently completed a unified system of indices (called ESPRIO) for the monitoring and evaluation of the ICT development in the country that has been designed to upgrade the policy benchmarking and evaluation practices and to facilitate more effective ICT policy making and implementation processes in the country.

- *The designing, developing and management of several 'support structures'*, that can further support the organisation and development of the national ICT sector, namely:
  – Centres of Excellence linking industry with academia;
  – ICT clusters;
  – ICT techno-parks;
  – Business incubators;
  – Etc.

  The creation in 2005 of the Hi-Tech Park for software companies in Belarus (acting also as a link with the research community) is a relevant example that brought positive results. Similar ICT-related parks could also be established having probably a more 'thematic' orientation e.g. by gathering organisations active in optics and photonics (what is already at the final stage of establishing), in micro-electronics, etc.

Overall, there are several EU Member States that possess considerable experience and know-how in successfully setting up and operating respective mechanisms and structures. Consequently, *the rational for twinning project(s) that will target to facilitate the know-how transfer on respective mechanisms and structures* from highly experienced relevant authorities of EU Member States to those of Belarus and Ukraine is based on the substantial benefits that this activity could bring to the two countries, minimising potential mistakes and maximising the use of their resources as well as the potential impact of such initiatives. Benefits for EU Member States are also evident since they could built further linkages with the two countries and prepare the ground for enhanced cooperation at both ICT research and industrial level.

Suggested time frame: short to medium term

Actors involved: the Belarusian and Ukrainian state authorities responsible for shaping ICT policies as well as those responsible for the setting up of respective mechanisms and structures should target to come into contact with their counterparts from EU Member States and agree on respective twinning project(s).

Barrier(s) addressed: B3, B6, U3, U4 and U6.

- **Rec. #4: Launch national consultation on FP7 participation.**

Through such process the state authorities can gather feedback from key national and regional ICT stakeholders (e.g. research organisations, private companies, IT associations, etc) on various issues (e.g. EU and national procedures and rules) affecting their participation in EU-funded research activities. For this purpose, an on-line consultation could be launched followed by dedicated round tables to collect the views of the main ICT Stakeholders on how national rules and legislation could be adjusted to facilitate their participation in international collaborative activities in ICT research. The aim should be to simplify and/or successfully address (to the extend this is possible) the existing barriers posed by rules applied at national level (e.g. accounting rules, taxation, visas, etc), which in many cases hinder the ICT research and industrial organisations of the two countries to be involved in international cooperation activities and, thus, help them take advantage of the available EU funding mechanisms.

For example, VAT is not eligible for funding in EU research programmes. As a result, an organisation from Belarus and Ukraine should apply for VAT exclusion for any FP7 project(s) it is involved in, a process that is not straightforward, requires considerable time and increases the administrative overhead on both the organisation and the state authorities. On the other hand, during the INTAS programme, a special Governmental Decree on VAT exclusion was signed in Belarus and applied *de-facto* to all projects funded under the specific programme. A similar provision could potentially be undertaken for participants involved in international research cooperation programmes (such as FP7) to limit the administrative workload both for participants as well as for the state authorities.

Another example, concerns the problems that may arise for the participants of both sides with respect to visa procedures. During the implementation of an EU-funded project, it is important for the partners to travel abroad for various purposes such as, project meetings, participation in events organised by the consortium or other authorities, the promotion of project outcomes in international conferences, etc. To do so, it is necessary for the involved Belarusian/Ukrainian partners to be able to easily get a visa or the opposite for the EU partners travelling to Belarus. This process, even though it is 'typical' and goes well-beyond the scope of a single international project (it is subject to bilateral agreements between countries), it sometimes increases the administrative overload and very often raises extra barriers, especially when meetings need to be scheduled in a short notice (e.g. within a month). To address this 'problem' special provisions could potentially be undertaken so that consortium partners be given with a visa that could be valid for the entire duration of the project and/or for activities related to 'the scope of the project' (i.e. travels that fall within the project objectives/obligations).

Suggested time frame: short to medium term

Actors involved: the Belarusian and Ukrainian state authorities together with the EU corresponding bodies should initiate and coordinate this process, while all ICT stakeholders should be actively involved.

Barrier(s) addressed: B1, B2, B3, U2 and U7.

- **Rec. #5: Set up a "*State Task Force for a more effective international cooperation in research*".**

A small and flexible "*team of advisors on international cooperation in research*" should be set up at state level. The team should target to support the country's efforts to collaborate with their EU counterparts, provide advice to policy/decision makers on EU affairs, e.g. with respect to how EU research policy is being formulated, how research programmes are designed, which are the crucial aspects for a more effective cooperation with EU at the research level, etc. The Task Force should primarily have a consulting role but it could also support policy makers and state authorities become quickly aware on EU reality e.g. through short-term intensive training on EU research policies and programmes and/or other related aspects. The team could also be involved in potential ERA-NETs (Rec. #2) or help establish close collaboration with authorities of various EU Member States and facilitate knowledge transfer activities on ICT policy formulation and implementation aspects (Rec. #3).

Suggested time frame: short to medium term

Actors involved: the team should be international, namely include experts from both the EU and Belarus/Ukraine and their selection should be made through an open and transparent 'call for experts' according to the legislation and procedures that apply in Belarus and Ukraine. It should be initiated and financially supported by the Belarusian / Ukrainian state authorities

Barrie(s) addressed: B6, B7, U6 and U7.

- **Rec. #6: Set up an "EU Task Force" in each leading RTD organisation**.

Set up and support the operation of a small flexible "*EU Task Force*" in each leading RTD Institution that will undertake the promotion and networking efforts of the Institute, acting as 'ambassadors' of the Institute to EU actors. Such an "*EU task force*" will include members that are experienced in EU affairs or have a strong interest towards them, have an excellent use of English language as well as outstanding communication skills. Their job will be to build relations with EU-27 ICT RTD actors either towards FP7 or beyond. More specifically, EU task force should aim to:

a) Lead the networking efforts of the Institute by promoting its research competencies and achievements to EU research leaders / potential partners. For example, it should organise delegation tours, invite EU experts to visit the premises of the Institute, discuss on (common) research interests, exchange ideas for future cooperation, etc;

b) Identify future opportunities as well as potential organisational barriers for international cooperation by e.g. participating in awareness, training seminars, conferences and networking activities and be familiarised with the participation rules that apply in FP7;

c) Make suggestions to the institute's administration on how to exploit/address opportunities/barriers, plus help the Institute to 'link'/ 'adjust' its research priorities with the latest evolutions taking place in the international research agenda; and

d) Disseminate information on EU funded activities internally (e.g. by organising awareness and training activities), as in many cases there is a communication gap among the various units of an organisation (for example, a department/laboratory/team maybe actively involved in EU funded research projects, but this knowledge/experience is not adequately spread in the other teams of the Institute and, thus, knowledge and experiences gained are not sufficiently exploited).

The formation of such teams should be funded either by the organisation's (internal) resources or by a state fund that could be used for this scope.

Suggested time frame: short to medium term

Actors involved: a team should be set up and financially supported by each leading Belarusian / Ukrainian research Institute that has a strong interest for international cooperation. Alternatively, a state fund could be used for this scope on a more selective basis.

Barrier(s) addressed: B1, B2, B3, B4, U1, U2 and U3.

- **Rec. #7: Enhance the National Contact Point (NCP) structure.**

The FP7 National Contact Points constitute a key mechanism to support the international collaboration efforts of the country, supporting and facilitating the research and business actors towards their participation in EU-funded research activities. Strengthening their role both **structurally and financially**, the NCPs could launch a national campaign to increase awareness on EU funding programmes through setting up regional information offices, organisation of info-days and training seminars, etc. The overall aim should be to inform the country's ICT RTD actors on the emerging opportunities for international collaboration, explain the rules for participation in such programmes, provide guidance on how to increase their visibility to their EU counterparts and help with partner search.

Suggested time frame: short to medium term

Actors involved: the Belarusian and Ukrainian state authorities

Barrier(s) addressed: B1, B4, U1 and U3.

- **Rec. #8: Create a 'framework of benefits / incentives' at both state and organisational level to change the mentality and increase the mobility of Belarusian & Ukrainian ICT researchers.**

This recommendation concerns the creation of a framework of support benefits / incentives both towards the leading RTD and industrial organisations but also towards the individual researchers (especially the young ones) so as to change their mentality and promote more actively their competencies internationally, increase their visibility to their EU counterparts as well as be involved in international networks.

Indicative actions that could be deployed *at national / state level* may include:

- Promote and support (especially financially) the submission of scientific papers in international journals to increase awareness on the scientific achievements of Belarusian/Ukrainian researchers by offering financial benefits or an 'enhanced' academic curriculum that will have a positive impact in researchers professional career;

- Support the organisation of international conferences where EU experts will be systematically invited to have direct contacts with national ICT actors, be informed on their competencies and achievements and investigate their collaboration potential;

- Support both structurally and financially the creation of international laboratories, like the virtual laboratory set up by the National Academy of Sciences in Belarus with EU RTD actors;

- Provide financial support, especially to young researchers, for their participation in international conferences and for the submission of international publications as well as to leading ICT actors to join European Technology Platforms, etc.

A similar 'framework of benefits / incentives' could be created at organisational level supporting researchers to adopt an international mentality and increase their mobility. This can be achieved either through the exploitation of state funds or by making the necessary adjustments in the institute's budget, or by changing accordingly the Institute's rules and prerequisites towards career development (e.g. favouring researchers with international publications, etc). Activities like the enhancement of researchers' English language skills, the publication of scientific papers in international journals, the participation in international conferences, etc will help the individual researchers to receive international recognition and, thus, enhance the institute's position in the international research arena as well as in multiplying its cooperation within international leading institutes.

Suggested time frame: short to medium term

Actors involved: such incentives should be created at state level by the respective Belarusian and Ukrainian state authorities but also at organisational level.

Barrier(s) addressed: B1, B2, B4, U1 and U3.

- **Rec. #9: Exploit the Research Diaspora**

Namely the highly qualified Belarusian and Ukrainian PhD students, professors, researchers, etc that already work in EU. This 'scientific capital' constitutes a unique '*multiplier*' for promoting the scientific excellence that exists in the two countries country, as they are familiar with the existing competencies and achievements of the leading Belarusian and Ukrainian research actors. In addition, they can act as '*intermediaries*' limiting the communication barriers and supporting the initiation of international collaborations, since they are aware of the differences in the mentality and working patterns of both sides and can help to smoothly bridge this gap. For example, the two virtual communities already created at LinkedIn (one focusing on EU-Belarus and one in EU-Ukraine cooperation) constitute focal points to exploit the Research Diaspora of both countries. In addition, such experts should be constantly kept in an 'active' status by inviting them to awareness, training and networking activities organised in Belarus and Ukraine to transfer their knowledge in EU funded activities and initiate collaborations.

Suggested time frame: short to medium term

Actors involved: such initiatives should be taken from both the state authorities and the research and business communities of Belarus and Ukraine.

Barrier(s) addressed: B1, B4, B5, U1, U3 and U4.

- **Rec. #10: Exploit several 'international collaboration instruments' (beyond FP7 programmes)**

To promote the competencies of Belarusian and Ukrainian ICT research teams and support their integration into international consortia. Such 'instruments' provide alternative funding sources to bring closer the research communities from the two regions. Indicatively the following are mentioned:

- The *Cross Border Cooperation programmes* under the European Neighbourhood and Partnership Instrument (ENPI) framework (such as the Baltic Sea Region, the Poland-Belarus-Ukraine, the Lithuania- Belarus- Latvia, the Hungary- Slovakia- Romania- Ukraine and the Romania- Moldova-Ukraine), as those programmes support ICT oriented activities directly or ICT aspects are included as an assumed precondition.

- The *Eastern Partnership* (for the case of Belarus), like the Platform 4 that support ICT related activities. For example, the activities within 2012-2014 (the Workprogramme for this period will be prepared within 2011) may be exploited to support the international collaboration efforts of SMEs.

- The *Tempus programme* that supports the modernization of higher education in the Partner Countries of Eastern Europe, Central Asia, the Western Balkans and the Mediterranean region, mainly through university cooperation projects that create an area of co-operation in countries surrounding the EU.

- The *European Technology Platforms (ETPs)*, which play a key role in better aligning EU research priorities to industry's needs, covering the entire economic value chain, ensuring that knowledge generated through research is transformed into technologies and processes, and ultimately into marketable products and services. ETPs offer great opportunities to build partnerships to share risk and compete worldwide, while speed up innovation, due to knowledge and experience sharing.

- *Bilateral agreements with EU Member States* like the one that exists between Belarus and Germany where the Federal Ministry of Science and Education already supports more than 10 research projects between research organisations from the two countries.

Suggested time frame: medium to long term

Actors involved: such initiatives should be taken from both the state authorities (to promote these opportunities) and the research and business communities of Belarus and Ukraine (to actively participate).

Barrier(s) addressed: all.

Annexes

Annex I: Cross-reference table of identified courses of action vs. key barriers for research cooperation with EU

Annex II: ICT areas of common interest for EU-Belarus and EU-Ukraine collaboration

Annex III: List of key actors involved in the consultation workshops in Belarus and Ukraine

Annex IV: List of key actors involved in the policy workshops in Belarus and Ukraine

Annex I: Cross-reference table of identified courses of action vs. key barriers for research cooperation with EU

	Identified course of action	Barrier(s) addressed	Suggested time frame	ICT actors involved
1	Launch SICA Call(s) for Proposals on areas of common interest	B1, B2, B3, B7, U1 and U2.	Medium to long term	✓ European Commission ✓ Belarusian and Ukrainian state authorities responsible for shaping ICT policies and programmes
2	Launch ERA-Net project(s) to facilitate the exchange of experiences and knowledge transfer.	B6, U6 and U7.	Medium to long term	✓ European Commission ✓ Belarusian and Ukrainian state authorities responsible for shaping ICT policies and programmes ✓ EU Delegations in Belarus and Ukraine
3	Launch twinning project(s) with EU Member States	B3, B6, U3, U4 and U6	Short to medium term	State authorities responsible for shaping ICT policies and programmes from ✓ Belarus and Ukraine ✓ EU Member States
4	Launch a national consultation process on FP7 participation	B1, B2, B3, U2 and U7.	Short to medium term	✓ Belarusian and Ukrainian state authorities ✓ National ICT stakeholders (e.g. the research and industrial communities)
5	Set up a "State Task Force for a more effective international cooperation".	B6, B7, U6 and U7	Short to medium term	✓ Belarusian and Ukrainian state authorities
6	Set up an "EU Task Force" in each leading RTD organisation	B1, B2, B3, B4, U1, U2 and U3	Short to medium term	✓ Research and industrial organisations from Belarus and Ukraine ✓ Belarusian and Ukrainian state authorities
7	Enhance the National Contact Point (NCP) structure	B1, B4, U1 and U3.	Short to medium term	✓ Belarusian and Ukrainian state authorities
8	Provide support and create incentives to change the mentality and increase the mobility of ICT researchers	B1, B2, B4, U1 and U3	Short to medium term	✓ Research organisations from Belarus and Ukraine ✓ Belarusian and Ukrainian state authorities
9	Exploit the Research Diaspora	B1, B4, B5, U1, U3 and U4	Short to medium term	✓ Research and industrial organisations from Belarus and Ukraine ✓ Belarusian and Ukrainian state authorities
10	Exploit several 'international collaboration instruments' (beyond FP7 programmes)	all	medium to long term	✓ Research and industrial organisations from Belarus and Ukraine ✓ Belarusian and Ukrainian state authorities

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Annex II: ICT RTD areas of common interest

II.1 The EU-BELARUS cooperation potential – areas of common interest

Belarus has a long tradition in the information and communication technologies and always has been in the centre of attention for foreign researches, universities and companies. Historically, the country was one of the most technologically advanced republics of the former Soviet Union. Belarusian R&D organisations have developed technical infrastructures such as supercomputers and computer systems for different medical applications, as well as for space technologies, nanotechnologies, photonics etc.

Following the analysis of the national ICT sector (performed by SCUBE-ICT partners) there are a number of ICT areas that exhibit a high collaboration potential between EU and Belarus. Amongst them the most prominent are:

- **Supercomputing**: During the past 10 years Belarus has became a major player in supercomputers. For example the "SKIF" clusters are the key elements in several Russian-Belarusian Union State Programme such as "SKIF", "COSMOS-SG", "TRIADA" and "SKIF-GRID".

- **Grid technologies and Infrastructure**: The long tradition of Belarusian universities in High Performance Parallel Architecture Computers has boosted the creation of **GRID-infrastructures**, which have been connected the European GRID structure, enhancing the collaboration opportunities between the Belarusian and EU RTD organisations and institutions. In 2010 the Belarusian research and education networks have been provided with direct connection to Pan-European scientific network GEANT with the speed of 1 Gbps.

- **e-health applications**: Belarus has a long history in electronic health and the most remarkable ICT medical systems developed by the Belarusian ICT organisations are those for histological images analysis. These systems meet the international specifications and are already used in medical organisations in Belarus. Moreover, several Belarusian Hospitals are established with electronic systems for collecting, monitoring and processing all the necessary information about the patients.

- **Micro/nano- electronics:** Belarus is considered a strong player in micro/nanoelectronics. Moreover, the Belarusian government is paying a strong attention to the micro/nano- development and it has approved the state competitive programme of scientific research "Electronics" and "Photonics" for 2006-2010.

- **Space/Space related technologies:** Belarus is one of the few countries whose specialists have been involved in the construction of space stations. The development of space and geo-information systems are strongly supported form the Belarusian government through the adoption of various programmes such as the **National Space Programme** (2008-2012).

Remarks:

✓ A detailed analysis on the ICT sector in Belarus is included in the respective publication: http://www.eeca-ict.eu/eeca/index.php/en/usefulinfo/national-reports/doc_download/7-belarus-national-ict-sector-a-policy-appraisal-report

✓ The collaboration potential between Belarusian and EU research and industrial ICT actors is outlined in the respective publication: http://www.eeca-ict.eu/eeca/index.php/en/usefulinfo/eu-eeca-collaboration-potential/doc_download/10-opportunities-for-eu-ict-actors-in-belarus

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The above areas have been mapped to the FP7-ICT Objectives during the consultation workshop ("**Current Situation and Priorities of Information and Communication Technologies Development in Belarus for 2010-2015**") organised in Minsk (BY) on 11/3/2010 by the EXTEND and SCUBE-ICT projects. The objective of the workshop was to obtain feedback from ICT stakeholders in order to determine the ICT R&D priorities in the country for the period 2010-2015 and, thus, conclude on the ICT areas that reflect the actual R&D capacities and potential, meet the technological / industrial trends, and address the key socio-economic needs of Belarus.

Based on the aggregated opinion of 30 top Belarusian ICT experts, the following FP7-ICT Objectives were identified and prioritized:

- ✓ 3.1 Nanoelectronics Technology
- ✓ 3.6 Computing Systems
- ✓ 1.2 Internet of Services, Software & Virtualization
- ✓ 2.1 Cognitive Systems and Robotics
- ✓ 4.1 Digital libraries and digital preservation
- ✓ 5.2 ICT for Patient Safety
- ✓ 5.1 Personal Health Systems
- ✓ 7.3 ICT for Governance and Policy Modelling
- ✓ 3.2 Design of Semiconductor Components and Electronic-based Miniaturised Systems
- ✓ 3.7 Photonics

In addition, the workshop participants highlighted the "*Most frequently proposed future ICT R&D opportunities beyond the FP7 ICT fields*":

- ✓ ICT for remote sensing of the Earth
- ✓ Digital cartography and GIS
- ✓ Real-time computing systems for technology processes control
- ✓ ICT for Space
- ✓ GRID technologies
- ✓ Medical information systems

These areas even though are not clearly presented in ICT Workprogramme 2009-2010, most of them are already in the new WP 2011-2012, plus in some other ICT related programmes and are considered as of high importance for the country.

II.2 The EU-UKRAINE cooperation potential – areas of common interest

Ukraine was always a technical region of the USSR and ICT is still one of the most popular and respective RTD and education domains in the region. The main strengths of Ukrainian ICT research organisations are in the highly educated human capital as well as the existence of considerable IT-infrastructure in specific areas, such as in supercomputers and computer systems for medical applications, which have been deployed in many Universities, research centres and institutions.

Following the analysis of the national ICT sector (performed by SCUBE-ICT partners) there are a number of ICT areas that exhibit a high collaboration potential between EU and Ukraine. Amongst them the most prominent are:

- **Supercomputing:** During the past 10 year a number of Ukrainian Universities have developed powerful supercomputers which allow solving complex scientific and applied problems, which required significant IT resources. Moreover the development of the National Grid infrastructure increases the possibilities of the Ukrainian universities to collaborate with the EU counterparts.

- **Microelectronics:** Ukrainian ICT organisations and Institutes have over a 50-year tradition in this areas and thus the EU organizations could increase their collaborations with Ukrainian universities in this area

- **e-health applications**: The development of these kind of applications is a common ICT RTD area between Ukrainian and the EU. Additionally, Ukraine has a long tradition in e-Health applications and a significant number of ICT organisations and private companies have developed several systems for medical applications.

- **e-learning applications:** Currently this is the most developed area of ICT collaboration between European and Ukrainian Universities. Additionally, the development of the National Grid infrastructure increases the possibilities of the Ukrainian universities to collaborate with the EU

- **e-government applications**: The development of e-government in Ukraine could be supported by EU ICT since Ukraine holds a low position (41 out of 70 countries) according to the e-government Readiness Index of 2008.

Remarks:

✓ A detailed analysis on the ICT sector in Ukraine is included in the respective publication:

http://www.eeca-ict.eu/eeca/index.php/en/usefulinfo/national-reports/doc_download/8-ukraine-national-ict-sector-a-policy-appraisal-report

✓ The collaboration potential between Ukrainian and EU research and industrial ICT actors is outlined in the respective publication: http://www.eeca-ict.eu/eeca/index.php/en/usefulinfo/eu-eeca-collaboration-potential/doc_download/11-opportunities-for-eu-ict-actors-in-ukraine

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The above areas have been mapped to the FP7-ICT Objectives during he consultation workshop ("***Current Situation and Priorities of Information and Communication Technologies Development in Ukraine for 2010-2015***") organised in Kiev (UA) on 31/3/2010 by the EXTEND and SCUBE-ICT projects. The objective of the workshop was to obtain feedback from ICT stakeholders in order to determine the ICT R&D priorities in the country for the period 2010-2015 and, thus, conclude on the ICT areas that reflect the actual R&D capacities and potential, meet the technological / industrial trends, and address the key socio-economic needs of Ukraine.

Based on the aggregated opinion of 20 top Ukrainian ICT experts, the following FP7-ICT Objectives were identified and prioritized:

- ✓ 3.6 Computing systems
- ✓ 3.9 Microsystems and smart miniaturised systems
- ✓ 1.2 Internet of services, software & virtualization
- ✓ 2.1 Cognitive systems and robotics
- ✓ 4.2 Technology enhanced learning
- ✓ 4.3 Intelligent information management
- ✓ 6.4 ICT for environmental services

Due to the fact that ICT in Ukraine historically possesses extremely high potential the experts who participated in the Consultation Workshop decided to keep on "the standby" position the following ICT priorities:

- ✓ 1.4 Trustworthy ICT
- ✓ 3.5 Engineering of networked monitoring and control systems
- ✓ 4.1 Digital libraries and digital preservation
- ✓ 5.1 Personal health systems
- ✓ 7.3 ICT for governance and policy modelling

Annex III: List of key actors involved in the consultation workshops

Both workshops attracted high level ICT stakeholders of Belarus and Ukraine respectively. Overall, the participating governmental and key ICT research and industrial representatives have a long track record in the formulation and shaping of the two countries' National ICT Strategic Agendas as well as of the current and future ICT research priorities and support measures. Consequently, their active involvement in the present consultation process provided an increased credibility on the actual consultation outcomes.

III.1 Consultation workshop in Belarus (11/3/2010, Minsk)

	Name of organisation	Type	Surname	First name	Position
1	General Information and Analytical Centre of the Ministry of Education of the Republic of Belarus	Ministry representative	Listopad	Nikolai	Director
2	Department on Information and Informatization of the Ministry of communication	Ministry representative	Milaenkova	Tatyana	Head of Department
3	Applied Program Systems Institute of the Ministry for Communication and Informatization of the Republic of Belarus	Ministry representative	Shavrov	Sergei	
4	Scientific and technological association «Infopark»	IT Association	Basko	Vladimir	Chairman of the Board
5	Centre for Identification Systems	Other direct ICT stakeholder	Dravitsa	Viktor	Director
6	NGO "Information Society"	NGO for ICT promotion	Enin	Sergei	Executive director
7	Belarusian State University, Department of Programming Technologies at the Faculty of Applied Mathematics and Informatics	Research institute	Kurbatski	Alexander	Head of the Department
8	Intelligent Information Technologies Department and Laboratory of Artificial Neural Networks, Brest State Technical University	Research institute	Golovko	Vladimir	Head of the Department
9	Centre of Nanoelectronics and Novel Materials, Belarusian State University of Informatics and Radioelectronics	Research institute	Borisenko	Victor	Head of the Centre
10	Laboratory of Systems Dynamics and Mechanics of Material, Belarusian National Technical University	Research institute	Miklashevich	Ihar	Head of Laboratory
11	Laboratory of Computer Systems and Pattern Recognition, Belarusian State University of Informatics and Radioelectronics	Research institute	Sadykhov	Rauf	Head of Laboratory
12	Laboratory of Mathematical Cybernetics, United Institute of Informatics Problems, National Academy of Science of Belarus	Research institute	Tuzikov	Alexander	Director General
13	Information Protection Laboratory, United Institute of Informatics Problems, National Academy of Science of Belarus	Research institute	Anishchanka	Uladzimir	Deputy Director
14	Quantum Optics Laboratory, B. I. Stepanov Institute of Physics, National Academy of Science of Belarus	Research institute	Kilin	Sergei	Head of Laboratory
15	Nano-Optics Laboratory, B. I. Stepanov Institute of Physics, National Academy of Science of Belarus	Research institute	Gaponenko	Sergei	Head of Laboratory
16	The Centre for Transfer of Energy-Efficient Technologies	Research institute	Khrabtou	Aliaksander	Director
17	Belarusian State University of Informatics and Radioelectronics	Research institute	Nelaev	Vyacheslav	Professor
18	Aerospace Educational Centre, Faculty of Radiophysics and Electronics, Belarusian State University	Research institute	Saetchnikov	Vladimir	Professor
19	Information Technologies and Means of Telecommunications Research Laboratory, Industrial Electronics Department, Yanka Kupala State University of Grodno	Research institute	Vauchok	Valery	Associate professor
20	Department of Applied Mathematics, Belarusian State University	Research institute	Krasnoproshin	Viktor	

	Name of organisation	Type	Surname	First name	Position
21	Joint private limited company "Mobile payments"	Other national ICT policy-maker	Zhukov	Vladimir	Director
22	Association «Infocom»	Private sector R&D	Narejko	Andrei	Chairman of the Board
23	SacramentIT	IT company	Egorov	Valerij	Director

III.2 Consultation workshop in Ukraine (31/3/2010, Kiev)

	Name of Organization	Type	Participants	Position
1	Association of Creators and Users of Intellectual Systems	IT Association	Vitaly Velychko	Director
2	IT Support Association of Ukraine	IT Association	Yuriy Peroganych	Director General
3	Lviv State Centre of Scientific, Technical and Economic Information	Research institute	Ivan Kulchytsky	Deputy Director
4	Institute of Space Research of NASU and NSAU	Research institute	Natalia Kussul	Deputy Director for R&D
5	Institute for Theoretical Physics		Sergiy Kruchynin	Leading Scientist
6	Ukrainian Institute of Information Technologies of NTUU "KPI"	Research institute	Inna Malyukova	Director, Counsellor to the Minister of Education and Science of Ukraine, UNESCO Inte For IT in Education Board Member
7	NTUU "KPI"	Research institute	Sergiy Shukaev	Head of the International Projects Dpt
8	Bogolyubov Institute for Theoretical Physics	Research institute	Eugen Martynov	Head of the Laboratory
9	Institute of Artificial Intellect Problems	Research institute	Eugen Malaschuk	Manager
10	International Laboratory of Microelectronics Technologies	Research institute	Sergiy Sarapoloff	Assistant Professor
11	National Aerospace University	Research institute	Andriy Volkovy	Assistant Professor
12	Taras Shevchenko Kyiv National University	Research institute	Nazar Kozar	Manager of the S&T International Cooperation Office
13	International IT Scientific and Training Centre of NASU and MESU	Research institute	Dmitry Rachkovsky	Leading staff scientist
14	V.M.Glushkov Institute of Cybernetics	Research institute	Olexandr Kolomiets′	Senior Staff – Scientist
15	Institute of Space Research of NASU and NSAU	Research institute	Andriy Shelestov	Senior Staff - Scientist
16	Odessa National Polytechnic University	Research institute	Andriy Anin	Staff scientist
17	Ternopil National Economic University	Research institute	Igor Paliy	Scientific Secretary

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Annex IV: List of key actors involved in the policy workshops

The participants in both policy workshops 'covered' all ICT stakeholders at national level, namely state authorities responsible for shaping RTD policies and programmes (*policy/decision makers and programme managers)*, the research and industrial communities (*knowledge producers and users*) and IT associations, techno-parks, NGOs and consultancies (organisations *that promote and support the development of the IT sector*).

Their high level is evident from their key positions in their organisations and their ability to influence the ICT developments in their country. <u>Indicatively</u>, among the participants were:

✓ In **Belarus**:

- Representatives (at the highest level) of the Ministry of Communication and Informatization (e.g. the deputy director of the department of Informatization);

- The CEOs of the Scientific and technological association "Infopark" and the NGO "Information Society";

- Directors of various departments and laboratories of key public research organisations.

✓ In **Ukraine**:

- Representatives (at the highest level) of State committee for science, innovations and informatization (e.g. the Chief of division);

- Representative of the Joint Support Office for Enhancing Ukraine's Integration into European Research Area;

- Directors of various departments and laboratories of key public research organisations.

IV.1 Policy workshop in Belarus (03/12/2010, Minsk)

<u>Belarusian participants</u>

	Last name	First name	Organisation	Position
1	Lebedev	Vladimir	Department of Informatization, Ministry of Communication and Informatization of the Republic of Belarus	Deputy director
2	Milaenkova	Tatyana	Department for Information and Informatization, of the Ministry of Communication and Informatization of the Republic of Belarus	Head of division
3	Trushko	Galina	Department for Information and Informatization, the Ministry of Communication and Informatization of the Republic of Belarus	Head of Unit
4	Belitskiy	Vladimir	TACIS Coordination Unit in Belarus	Project Manager
5	Berezovskij	Dmitrij	TACIS Coordination Unit in Belarus	Executive Director
6	Basko	Vladimir	Scientific and technological association «Infopark»	CEO
7	Dravitsa	Viktor	Centre for Identification Systems	Director
8	Enin	Sergei	NGO "Information Society"	CEO
9	Filatov	Sergue	Institute of Heat and Mass Transfer, National Academy of Science of Belarus	Head of lab
10	Gaponenko	Sergei	Nano-Optics Laboratory, B. I. Stepanov Institute of Physics, National Academy of Science of Belarus	Head of Lab
11	Karyagin	Vladimir	Minsk Union of Managers and Employers, Chairman of the Presidium of CIS Republican Confederation of Entrepreneurship	Chairman
12	Kilin	Sergei	Quantum Optics Laboratory, B. I. Stepanov Institute of Physics, National Academy of Science of Belarus	Head of Lab, Vice-chairman of the National Academy of Sciences
13	Lednik	Igor	Center of ownership protection, rights of managers and entrepreneurs protection under CIS Republican Confederation of Entrepreneurship	Deputy CEO
14	Litvinov	Valentin	Information center of German economy	RTD Cooperation consultant

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	Last name	First name	Organisation	Position
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17	Meerovskaya	Olga	BELISA	National NCPs Coordinator
18	Miklashevich	Ihar DSci.	Laboratory of Systems Dynamics and Mechanics of Material, Belarusian National Technical University	Head of Lab
19	Podkopaev	Vladimir	Department of International Affairs, Presidium of the National Academy of Sciences of Belarus	Head of Department
20	Sadykhov	Rauf	Laboratory of Computer Systems and Pattern Recognition, Belarusian State University of Informatics and Radioelectronics	Head of lab, Prof
21	Saetchnikov	Vladimir	Aerospace Educational Centre, Faculty of Radiophysics and Electronics, Belarusian State University	Centre Director, Head of Division
22	Tuzikov	Alexander	Laboratory of Mathematical Cybernetics, United Institute of Informatics Problems, National Academy of Science of Belarus	Director, FP7 SPACE NCP
23	Uspenskiy	Alexander	Republican Centre for Technology Transfer (RCTT)	Director, ISTOK-SOUYZ partner
24	Volotovskij	Igor	Department of Biological Sciences, National Academy of Sciences of Belarus	Head of Lab, FP7 Health NCP
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27	Murashko	Larisa	UIIP NASB	Senior researcher
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	Last name	First name	Organisation	Position	Country
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2	Egebart	Bent	Whyse sa	Owner, manager	Denmark
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IV.2 Policy workshop in Ukraine (23/11/2010, Kiev)

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2	Romaniuk	Oleksandr	State committee for science, innovations and informatization	Main specialist
3	Kyyak	Bogdan	The State Fund for Fundamental Researches	Director of the SFFR
4	Maksimova	Olena	State committee for Science, Innovations and Informatization	Main specialist
5	Shanchuk	Anatoliy	Joint Support Office for Enhancing Ukraine's Integration into European Research Area	Thematic Expert
6	Bui	Dmytro	Faculty of Cybernetics (Taras Shevchenko National University of Kyiv)	Vice dean
7	Danko	Alexander	IBM Ukraine	IBM Government Relations Coordinator
8	Demeshchyk	Andriy	Odessa regional state administration	Adviser of Head of Odessa Regional State Administration
9	Globa	Larysa	NTUU "KPI"	Head of Information – telecommunication Nets chair

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APRIL 2011

	Last name	First name	Organisation	Position
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11	Hrebennikov	Valery	UNDIZ (Ukrainian scientific-research institute of communications)	Leading scientific worker
12	Ignatenko	Oleksiy	Institute of Software Systems of NAS of Ukraine	Senior Research Fellow
13	Ivaniv	Olena	Taras Shevchenko Kyiv University	Associate Professor
14	Klyuchyk	Olena	LvCSTEI	Information manager
15	Kolomiyets	Oleksandr	Glushkov Institute of Cybernetics of NAS of Ukraine	Senior researcher
16	Kovalenko	Oleksandr	International Scientific and Study Centre IT&S NASU	Professor
17	Kulchytskyy	Ivan	LvCSTEI	Deputy director
18	Kurcuda	Volodymir	UINTEI	Researcher
19	Liabakh	Kateryna	International Scientific and Training Centre Information Technologies and Systems	Leading science researcher
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21	Lozytskyy	Oleksandr	Lviv Polytechnic National University	PhD student
22	Malaschuk	Evgeniy	Donetsk State Institute of Artificial Intelligence	scientist
23	Molchanov	Danylo	Municipal enterprise "Regional information-analytical center"	Deputy director
24	Moroz	Grigoriy	Institute of Software Systems of NAS of Ukraine	Scientific Secretary
25	Moroz	Volodymyr	Odessa National University	ICT Vice-Rector
26	Palagin	Oleksandr	V.M. Glushkov's Institute of Cybernetics of National Academy of Sciences of Ukraine	Depute-director
27	Pasichnyk	Volodymyr	Lviv Polytechnic National University	Professor
28	Perevozchikova	Olga	Glushkov Institute of Cybernetics of NAS of Ukraine	Head of Department
29	Perohanych	Yuri	Association of IT Enterprises of Ukraine	Director
30	Pogorilyy	Sergiy	Taras Shevchenko National University of Kyiv	Professor
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	Last name	First name	Organisation	Position	Country
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