

Project Deliverable

Project Number: 288279	Project Acronym: PICTURE	Project Title: Policy dialogue in ICT to an Upper level for Reinforced EU-EECA Cooperation
----------------------------------	------------------------------------	--

Instrument: SUPPORT ACTION	Thematic Priority: International collaboration
--------------------------------------	--

Title: D2.4 ROADMAP FOR PICTURE SUPPORT TO ICT POLICY DIALOGUE
--

Contractual Delivery Date: Month 17 (April 2013)	Actual Delivery Date: 12/03/2013
--	--

Start date of project: December, 1st 2011	Duration: 30 months
---	-------------------------------

Organization name of lead contractor for this deliverable: Q-PLAN NORTH GREECE	Document version: V1.0
--	----------------------------------

Dissemination level (Project co-funded by the European Commission within the Seventh Framework Programme)		
PU	Public	X
PP	Restricted to other programme participants (including the Commission)	
RE	Restricted to a group defined by the consortium (including the Commission)	
CO	Confidential, only for members of the consortium (including the Commission)	

Abstract : This document outlines the PICTURE partners' analysis regarding the ICT R&D policy dialogue between the EU and the EECA countries and presents the pilot actions that will be carried out during the next stages of the project.

Authors (organizations)

Mr. Kostas Bougiouklis & Mr. Petros Papadionisiou (Q-PLAN, Greece)

Local Correspondents in the EECA countries:

Levon Aslanyan & Hasmik Sahakyan (IIAP, Armenia)

Tofiq Babayev (RITA, Azerbaijan)

Tatyana Lyadnova (BelISA, Belarus)

Givi Kochoradze & Ramaz Kvatadze (GRENA, Georgia)

Timur Shalabayev (NATD JSC, Kazakhstan)

Kunduz Rysbek (EIMO, Kyrgyzstan)

Lidia Romanciuc, Igor Cojocar & Anastasia Stefanita (CIP, Moldova)

Marat Biktimirov & Alexander Sher (e-ARENA, Russia)

Ilkhom Mirsaidov (SODESCO, Tajikistan)

Charyyar Amansahedov & Rustam Gadzhiev (SCC Altyn Umyt, Turkmenistan)

Ivan Kulchytskyy & Olena Mishak (AEI, Ukraine)

Prof. Fatima Adilova (IMNUU, Uzbekistan)

Revision History

The following table describes the main changes done in the document since it was created.

Revision	Date	Description	Author (Organisation)
1 st	13/11/2012	Draft version	Mr. Kostas Bougiouklis & Mr. Petros Papadionisiou (Q-PLAN, Greece)
2 nd	21/02/2013	Update	Mr. Kostas Bougiouklis & Mr. Petros Papadionisiou (Q-PLAN, Greece)
3 rd	5/03/13	Finalisation	Mr. Kostas Bougiouklis & Mr. Petros Papadionisiou (Q-PLAN, Greece)

Remark

This Report has been conducted for the European Commission, DG CONNECT, under FP7-ICT-2011-7.

Disclaimer

Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use, which might be made of the following information. The views expressed in this report are those of the authors and do not necessarily reflect those of the European Commission

Copyright © PICTURE Consortium, 2013

Reproduction is authorised provided the source is acknowledged

Table of Contents

INTRODUCTION	4
1 ICT RESEARCH PRIORITIES IN EECA COUNTRIES	7
2 ICT RESEARCH POLICY IN EECA COUNTRIES	11
3 HORIZON 2020	13
4 RECOMMENDATIONS TO FACILITATE THE ICT R&D POLICY DIALOGUE BETWEEN THE EU AND THE EECA COUNTRIES	15
4.1 Introduction	15
4.2 Description of Recommendations	17
5 PILOT ACTIONS	29
5.1 Introduction.....	29
5.2 Pilot Action for Working Group 1	30
5.3 Pilot Action for Working Group 2	31
5.4 Pilot Action for Working Group 3	32

INTRODUCTION

The European Union (EU) and the Eastern European and Central Asian countries (EECA) share the common goal of achieving political, economic and social stability and prosperity. Knowledge-based economies are considered key to success in both regions. In order to achieve the aforementioned objectives in a global competitive environment, close cooperation is considered critical between individual countries or institutions in both regions and is supported by a number of strategic policy umbrellas, which systematically strengthen the political and economic ties between the regions.

ICT development is essential for any knowledge-based economy and an indispensable asset for responding to the global challenges which affect – directly or indirectly – all of us. Bilateral and multilateral cooperation in the field of ICT Research & Development (R&D) is also essential to make optimum use of each other's academic strengths, share respective resources and prepare the ground for transforming of scientific results into innovative applications for national, regional and worldwide markets.

Although cooperation in Information and Communication Technology (ICT) between the EU and the EECA countries is developing quite fast, there is still room for considerable improvement.

Furthermore, Union's new strategic approach¹ to international cooperation in research and innovation is characterised by:

- Horizon 2020 being fully open to third country participants;
- Targeted international cooperation activities with the scale and scope necessary to maximise impact;
- The development of multi-annual roadmaps for cooperation with key partner countries and regions;
- Reinforcing the partnership between the Commission, the Member States and relevant stakeholders;
- Promoting common principles for the conduct of international cooperation in research and innovation;
- Enhancing the role of the Union in international organisations and multilateral fora.

The EU-EECA policy dialogue among stakeholders is essential for the further strengthening of ICT R&D cooperation between the two regions. In that respect, PICTURE project:

- created three thematic Working Groups² with the objective to provide the project with strategic vision regarding the EU-EECA ICT collaboration in specific application and research domains, whilst connecting the project to key relevant players both in Europe and in the EECA countries;
- updated the ICT R&D priorities for cooperation between the EU and the EECA countries³;

¹EU document COM (2012) 497 "Enhancing and focusing EU international cooperation in research and innovation: A strategic approach"

² WG1: ICT Policy Dialogue, WG2: Components, Computing Systems and Networks, WG3: Content Technologies and Information Management.

³ EECA cluster project was the joint effort of 3 complementary FP7-ICT support actions (ISTOK-SOYUZ, SCUBE-ICT and EXTEND) that were running from January 2009 until June 2011 with the common mandate of strengthening the cooperation between EU and EECA countries in the field of Information and Communication Technologies (ICT). One of the cluster's achievements was the identification of ICT R&D priorities for cooperation between the EU and the EECA countries.

- analysed the recent activities that have been implemented in the EECA countries regarding the EU-EECA ICT Policy Dialogue;
- prepared recommendations to enhance the EU-EECA ICT R&D cooperation and designed pilot actions to facilitate the ICT R&D Policy Dialogue between the EU and the EECA countries;
- organized a validation and dissemination workshop (Moscow November 2012) to discuss and consolidated the above findings, recommendations and pilot actions with ICT policy stakeholders from both regions.

The present document (Roadmap for PICTURE support to ICT policy dialogue) outlines the so far findings and recommendations of PICTURE project and presents some pilot actions to be implemented during the next stages of the project. The Roadmap aims to serve as an input to future dialogue activities between the EU and the EECA region and is based on:

- extensive desk research;
- interviews/ contacts with national EECA ICT policy stakeholders;
- meetings with the EC delegations in EECA countries;
- the outcomes of Moscow's validation and dissemination workshop.

The Roadmap consists of five chapters:

- The first chapter (ICT research priorities in EECA countries) summarizes the present ICT research priorities for cooperation with the EU in Eastern Partnership (EaP) countries, in Central Asia and in the Russian Federation.
- The second chapter (ICT research policy in EECA countries) outlines the present trends in ICT policy in the EECA countries focusing on the status of international cooperation and policy dialogue in ICT.
- The third chapter presents HORIZON 2020 structure, priorities and objectives with emphasis on ICT-related topics.
- The fourth chapter displays PICTURE recommendations addressed to specific stakeholder groups that aim to facilitate the ICT R&D policy dialogue between the EU and the EECA countries.
- The fifth chapter includes the planning for pilot actions to be implemented during the next stages of the project.

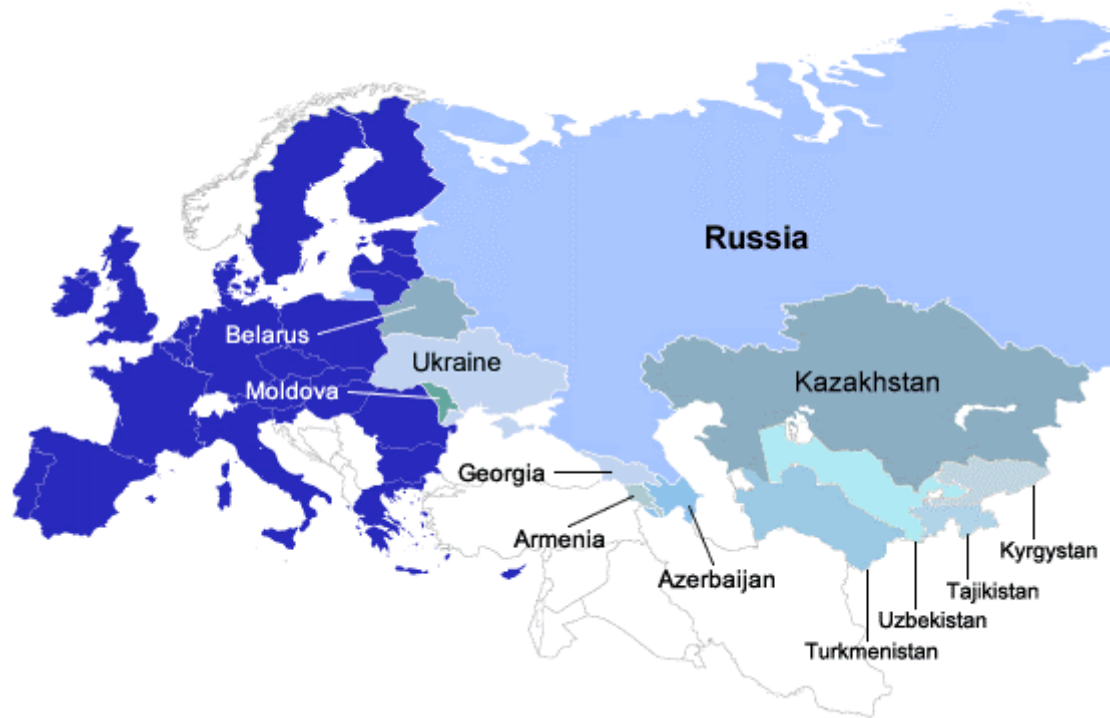


Figure 1: The ECA Region

For a more comprehensive analysis, the Eastern Europe and Central Asia region (ECCA region) is divided into three sub regions based on common ICT R&D features:

- European Partnership (EaP) countries consisting of: Ukraine, Belarus, Moldova, Georgia, Armenia and Azerbaijan;
- Central Asia (CA) countries consisting of: Kazakhstan, Turkmenistan, Uzbekistan, Tajikistan and Kyrgyzstan;
- Russian Federation.

1 ICT RESEARCH PRIORITIES IN EECA COUNTRIES

The identification of EECA ICT priorities for cooperation with the EU was based on the findings of the EECA cluster project, on review of new national ICT policy documents and on interviews/ contacts with national ICT policy stakeholders. The identified priorities were consolidated during the validation and dissemination workshop in Moscow.

Eastern Partnership (EaP) countries

Identified Priority topics:

- **Topic 1: GRID and Cloud Computing.** Rational for selection: EaP countries are actively developing their own Grid infrastructures, and close collaboration and interaction with the European Grid Infrastructure is foreseen. It is reasonable therefore to envisage developing interoperable solutions and standards as well as pilot actions for cooperation around the topic of advanced programming techniques for supercomputing. Some countries are members of EGI, most EaP countries are connected to the Pan-European GÉANT network and are willing to develop further this cooperation with EU.
- **Topic 2: ICT for e-learning and digital information services.** Rational for selection: Universities, research institutes, libraries and cultural centres could be involved in activities on information digitizing as well as new technologies for digital information access development. The development of such sub-priorities as digital libraries, e-services for access to cultural heritage and technology enhanced learning, such as E-learning resources are amongst the most important priorities.
- **Topic 3: Nanoelectronics, Microelectronics.** Rational for selection: the EaP countries possess a high level expertise in this topic and a critical mass of high-level researchers. Common scientific programmes are being implemented within the EECA countries cooperation activities, and some shared infrastructure has been developed. The new generation of components and systems development is also of great importance nowadays.
- **Topic 4: Electronic governance (e-governance), including intelligent information management.** Rational for selection: EaP countries are planning to create new services for home and international citizens (as well as for business, simplifying regulatory procedures) with the help of new ICT solutions. The joint development of agreed solutions is an important task.
- **Topic 5: ICT for Health.** Rational for selection: this topic is one of the most significant societal challenges in EaP countries, as well as in the EU. It is important to develop interoperable solutions and standards within this field as well as to foster technical solutions implementation in EaP countries that would be in line with the best European practices.

Central Asia (CA) countries

Identified Priority topics:

- **Topic 1: Advanced Networking.** Rational for selection: Communication infrastructure and services are developing very rapidly in Central Asia countries. The development of cooperation with EU countries will result in a decrease in the technology gap with the CA countries and an increasing level of their own R&D activities. It is reasonable to envisage the Grid and Cloud computing as pilot actions for the training of local researchers & engineers,

with the aim to develop shared regulations and use of interoperable standards in EU and CA countries.

- **Topic 2: ICT for e-governance, e-learning and digital information services.** Rational for selection: Providing citizens and industries with an access to information via new technologies is recognised as a key tool of democratic development in CA countries. As for now, an active integration of new digital services is taking place. The development of such sub-priorities as corporate systems and networks supporting digital libraries, e-services for access to cultural heritage and scientific and educational knowledge are among the most important. These services can be developed for cultural heritage preservation, digital libraries and education projects. Many R&D organizations of CA countries area are already adapting current technologies and have started developing their own applications.
- **Topic 3: ICT for Health, including telemedicine and interoperability of patient summary between EU and CA countries.** Rational for selection: This topic is one of the most significant societal challenges in CA countries, as well as in the EU. It is important to develop interoperable solutions and standards within this theme as well as to foster technical solutions implementation in CA countries that would be in line with the best European practices.
- **Topic 4: Process automation in resources management trials, (note: this is not considered a "priority R&D topic" in Central Asia for the moment, but this is the topic that corresponds to the local needs/demand; the relevant technologies are currently acquired abroad).** Rational for selection: CA countries concentrate on the engineering of new infrastructures and development of locally tailored applications. As such they are eager to incorporate new R&D advances in their deployments and as such offer testbeds and trial environments, especially in the fields of resource management (energy, water).

Russian Federation

Identified Priority topics:

- **Topic 1: Advanced Software Engineering.** Rational for selection: Russia has profound background in both applied software development and systems development. Latest initiatives of the Russian Government on Software Engineering, including creation of the National Software Platform, manifest the intention to replace imported software in state governance and enterprises with open-source alternatives. Selection of open-source products opens the way to unique mutually beneficial cooperation between EU and Russia. Open-source software does not have borders, it easily allows for collaborative development and reuse in various scenarios. Establishment of the National Software Platform provides an opportunity to set up cooperation at the level of big industrial/research consortia that ETP actually are. Such cooperation might result in further clarification of Strategic Agendas and Implementation Plans.
- **Topic 2: Embedded Systems Robotics / Intelligent Systems.** Rational for selection: Embedded systems are widely used to control complex systems. Russian research bodies and private companies are active at development of new hardware and software embedded systems; focus is on the real-time control systems and extreme conditions of operations. EU-RF R&D collaboration in the field of embedded electronics components will contribute to increasing the share of the ES value in the final product especially in sectors such as Industrial, Telecommunications, Consumer Electronics, Smart Homes and Health/Medical Equipment. This domain is supported by the National Platform on Mechatronics, Embedded Control Systems, RFID and Robotics.

- **Topic 3: GRID and Cloud computing / High-performance computing.** Rational for selection: Russia has developed an outstanding expertise in key fundamental research domains such as micro/nanoelectronic, aerospace and other scientific domains making strong use of mathematical background. All of these require intensive modeling and computations. High Performance Computing (HPC), including Grid computing, cloud computing, supercomputers, is the major research tool in physics, chemistry, biology and other sciences. HPC is one of the driving forces of the modern technology; it is used in automobile, aerospace, microelectronics and other industries. Russia has a critical mass of competences in HPC systems design and implementation and its applications to various needs of natural sciences and national industries.
- **Topic 4: Network of the Future.** Rational for selection: The vastness of the territory of Russia gives a unique opportunity for large scale networking infrastructures, providing access to new and next generation services for more than 10% of the Earth's land. It calls for new communication media, new security challenges and trust infrastructures. There are some valid reasons to raise the importance of EU-RU joint projects in this field. Firstly this area has a great potential related to growing interoperability between infrastructures. Secondly, EU scientists attesting very strong theoretical background need to reinforce the "proof of the concept" level and validation of research results. Russian IT researchers possess very strong software engineering skills, which has a great impact on rapidly proving the conceptions in applied research areas. Finally, the joint next generation IT projects can incite a huge interest of business investors requiring for quite obvious demonstrations of success and for rapidity of technology commercialization. This ICT domain correlates with the National Software Platform.
- **Topic 5: Nanoelectronics.** Rational for selection: Nanotechnologies are included into the list of the critical technologies of the Russian Federation. State Corporation "RosNano" was established to fund fundamental and applied research in this area. Several leading research centers including Kurchatov Institute were oriented towards research in nanotechnologies. It is reasonable to launch collaborative action relevant to the entire topic of nanoelectronics. Russia has critical scientific mass and advanced technological competences in the entire nanoelectronics area. These domains are supported by the National Platform "Innovative Laser, Optical and Optoelectrical Technologies – Photonics" and RUSNANO State Corporation.
- **Topic 6: Digital Libraries.** Rational for selection: The research EU-RF project will boost the development of new digital library centers (academic library, law library, medical library, etc.). R&D joint projects will contribute to achieving excellence for digitization and preservation processes. They will integrate knowledge access for technology-based and traditional companies increasing their competitiveness. A particular challenge that joint EU-RU projects should address is the need to develop stronger and more varied forms of privacy protection. A new integration initiative "Scientific Heritage of Russia" was launched in 2010 that embraces libraries of the Russian Academy of Sciences, universities and research centers and sets an ambitious goal of providing united access to the whole body of scientific texts in the Russian language.
- **Topic 7: ICT for Health.** Rational for selection: Health research is positioned as one of the three strategic areas for cooperation with the European Union. The health market in Russia offers important potential and is set to grow quickly. The Russian market for medical technology is worth 2 billion \$ a year and is growing by about 15% per annum. European IT

providers can strengthen their presence in Russia's healthcare market. In 2011 the government approved creation of "Medicine of the Future" Technology platform as well as two RTPs on biology and related sciences. Rapid advance in the area of ICT for Health is expected, thanks to new level of cooperation and integration in Russia that RTPs should provide.

- **Topic 8: Security Trustworthy ICT.** Rational for selection: Security is a specific topic in Russian ICT since its primary customers are law enforcement and defense agencies. As a result it is notably closed for cooperation. Still in 2011 the initiative of the National Software Platform proclaimed security as one of the key objectives of the platform, with stress on open-source and redistributable hardware and software systems. This gives a perspective of opening R&D in security for international cooperation. This ICT domain is covered by National Software Platform.

2 ICT RESEARCH POLICY IN EECA COUNTRIES

For each of the three sub-regions (Russia, EaP countries and CA countries), the current state of ICT R&D Policy was examined in relation to four specific issues:

- ICT Strategies / Policies.
- Structure of National ICT Governance Systems.
- State of International Cooperation.
- Recent ICT Policy Dialogue Activities with the EU.

The relevant information was collected by PICTURE local partners according to a specific methodology and based on:

- extensive desk research;
- interviews/ contacts with national ICT policy stakeholders;
- meetings with the EC delegations in EECA countries.

The main conclusions of this analysis are presented below.

Russia's dimension and size of population but also its economic and geopolitical weight (Russia is member of the G8 and UN Security Council) far surpass the other countries. Also, in terms of ICT potential and absolute output, Russia is greatly ahead followed by Ukraine. **Policy framework for ICT** is most advanced in Russia in relation with any other country in the EECA region. Recently introduced measures support the creation of a structured national ICT policy framework including the identification of national priorities, the introduction of performance-based budgeting, the ongoing restructuring of the governmental R&D sector, human resources and infrastructure development, etc. Russia has a complex **ICT governance system** with several interdepartmental Councils and Committees and no assigned organization (public authority) for coordinating the development and implementation of the State ICT policy. The intensity in **international ICT cooperation** (e.g. participation in the 7th EU Framework Programme, agreements with the EU and member states) is strongest for Russia comparing with any other country in the EECA region. The **ICT policy dialogue** between Russia and EU is well established and has already produced important results mainly in the form of several bilateral agreements.

All **Eastern Partnership (EaP)** countries share a common "historical" background which was marked by the dramatic downsize of the ICT R&D intensity since the early 90s (i.e. the collapse of the Soviet Union). In recent years all **EaP** countries have defined their **policies on ICT R&D** through the development of relevant legislation. There are several laws and amendments to the national strategies for the development of ICT, but very few have concrete quantitative targets or follow a comprehensive systematic approach. Most **EaP** countries are still performing reforms in their **National ICT Governance Systems** or have just implemented them. The evaluation of the effectiveness of the above Systems will be possible after the completion of the reforms and the operation of the reformed Systems for a certain period. The state of **international ICT cooperation** (e.g. participation in the 7th EU Framework Programme) is quite advanced in most countries of the region with Ukraine to have precedence over the other countries and Moldova to attain the status of an associated country in January 2012. With that said there is still much room for further development regarding the ICT cooperation between the **EaP** countries and the EU.

ICT policies and **National ICT Governance Systems** are in a phase of transition in all countries of **Central Asia (CA)**. All governments have taken up concrete measures for the progress and development of ICT R&D in their countries. It is essential that the new ICT policies and the reformed

ICT Governance Systems take into account the important economic and societal challenges that these countries are facing. Central Asia countries have not yet reached the high level of **international cooperation** that characterizes the other EECA countries and especially Russia. Nevertheless, significant efforts are being made towards strengthening cooperation both with EU and the international community in general. The extent of the **ICT policy dialogue** with the EU is rather limited in all CA countries. Various types of opportunities to facilitate the dialogue and cooperation in ICT between EU and Central Asia countries should be examined such as the integration into European Technology Platforms (ETP's), benchmarking activities / projects and twinning projects.

Although the ICT cooperation between the EU and the EECA partner countries is quite strong there is still much room for further development. Acknowledging the current global as well as societal challenges both regions are facing, new perspectives should be developed for the strategic ICT partnership between the EU, countries associated with the present European RTD Framework Programme and the EECA region, building on each others' strengths and on common policy objectives.

Despite national specificities, the countries in each of the two regions share a lot of common elements which, in turn, provide the rationale for EU-EECA cooperation at policy level, among others:

- the geographic proximity: they are neighbors (in particular the EaP countries) and therefore share traditional societal and cultural links, economic proximity and strong trade as well as common regional challenges ahead;
- the need for common policy frameworks allowing optimum use of opportunities (scientific, economic, political) through joint policy approaches;
- the need for strong public and private institutions on both sides to create a win-win situation; therefore institution building and institutional networking between the two regions needs to be improved;
- to ensure optimum circulation of knowledge throughout the two regions in order to develop human capacities;
- to offer compatible, coordinated or joint instruments for policy implementation ensuring equal footing/balanced partnership and reciprocity.

3 HORIZON 2020

Horizon 2020 is the financial instrument implementing the Innovation Union, a Europe 2020 flagship initiative aimed at securing Europe's global competitiveness. Running from 2014 to 2020, the EU's new programme for research and innovation is part of the drive to create new growth and jobs in Europe. Horizon 2020 will focus resources on the following key priorities (ICT-related topics are written with bold characters):

1. Excellent Science:
 - Frontier Research (ERC);
 - **Future and Emerging Technologies (FET);**
 - Skills and career development (Marie Curie);
 - **Research infrastructures.**
2. Industrial Leadership:
 - Leadership in enabling and industrial technologies:
 - **ICT:**
 - ✓ **New generation of components and systems;**
 - ✓ **Next generation computing;**
 - ✓ **Future Internet;**
 - ✓ **Content technologies and information management;**
 - ✓ **Advanced interfaces and robots;**
 - Nanotechnologies, advanced materials, advanced manufacturing and processing;
 - Biotechnology;
 - Space;
 - Access to risk finance;
 - Innovation in SMEs.
3. Societal Challenges:
 - **Health, demographic change and wellbeing (e-health, self management of health, improved diagnostics, improved surveillance, health data collection, active ageing, assisted living);**
 - Food security, sustainable agriculture, marine and maritime research and bio-economy;
 - **Secure, clean and efficient energy (smart cities, Energy efficient buildings, smart electricity grids, smart metering);**
 - **Smart, green and integrated transport (smart transport equipment, infrastructures and services, innovative transport management systems, safety aspects);**
 - **Climate action, resource efficiency and raw materials (ICT for increased resource efficiency; earth observation and monitoring);**
 - **Inclusive, innovative and secure societies (digital inclusion; digital skills; social innovation platforms; e-government services; e-learning; e-culture; cyber security; ensuring privacy and protection of human rights on-line).**

The structure and the objectives of Horizon 2020 are better illustrated in figure 2

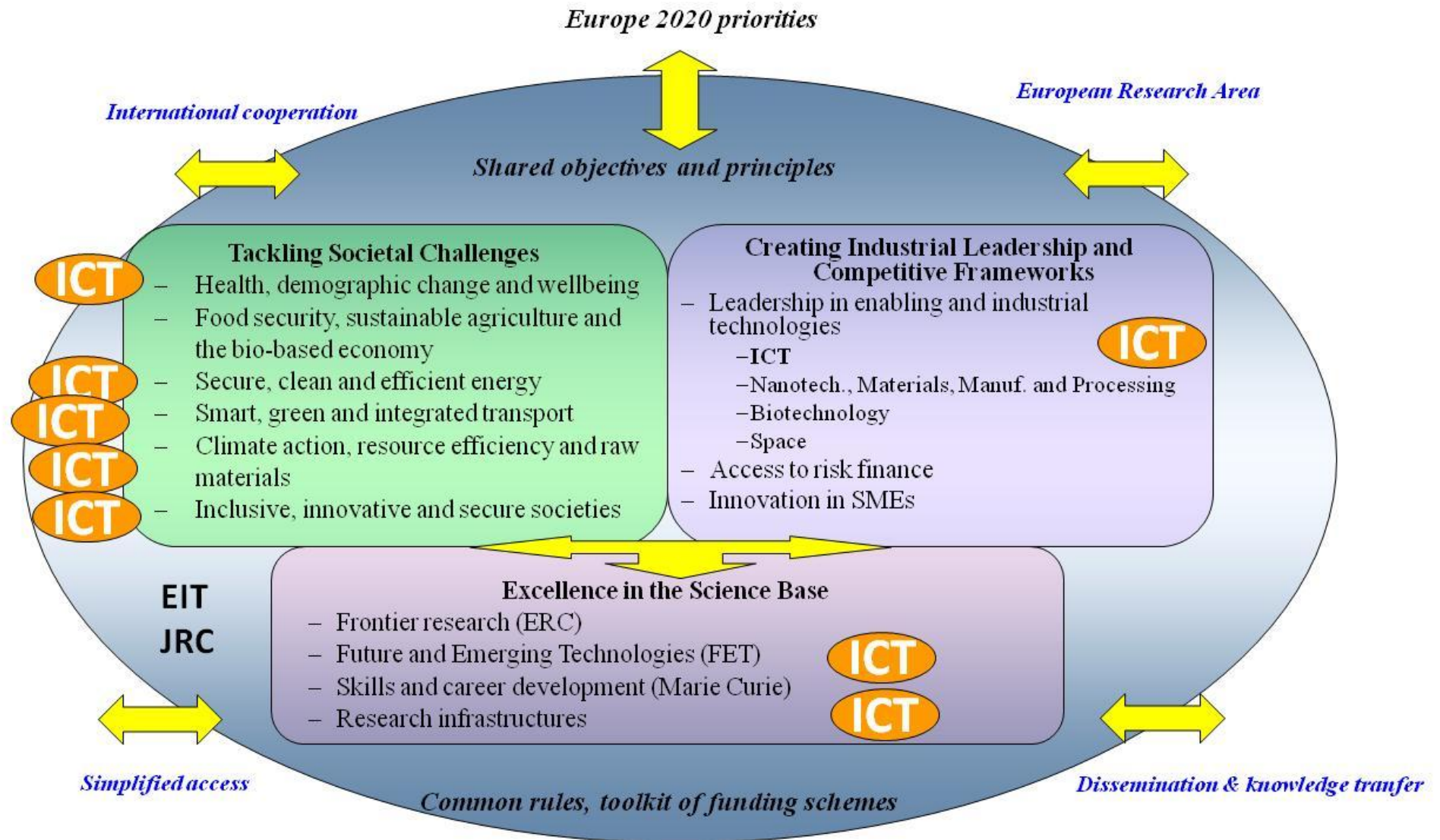


Figure 2: Horizon 2020 – Objectives and Structure

4 RECOMMENDATIONS TO FACILITATE THE ICT R&D POLICY DIALOGUE BETWEEN THE EU AND THE EECA COUNTRIES

4.1 INTRODUCTION

Building on the analysis of the current state of ICT R&D Policy in the EECA region and on the identified EECA R&D ICT priorities for cooperation with the EU, PICTURE project has identified the present challenges for the EECA region, which could be best addressed through fostering EU-EECA cooperation and has prepared some recommendations. The recommendations are organized into four main themes as follows:

1. Reinforcing international dimension of the national ICT research strategies

There are several challenges directly related to strategic policy-making and good governance, such as strengthening the institutional fabric of the ICT policy-delivery systems with efficient tools and instruments (such as trans-national targeted ICT R&D funding programmes) and making optimum use of international cooperation.

2. Strengthening international capacities and dimension of ICT R&D institutions in EECA. In order to make objectives related to international ICT cooperation attainable, research institutions have to be in the position to efficiently perform their duties, to adjust to changing demands in society and the economy and to possess the means for international ICT competition and cooperation.

3. Promotion the participation of the private sector in international ICT R&D projects

The engagement of the private sector in R&D is a challenge not only in EECA but also for several EU Member States. This is closely connected to the setting-up of an appropriate framework with the ultimate goal of increasing the number of innovative companies.

4. Getting ready for EU-EECA cooperation under Horizon 2020

Horizon 2020 reflects Union's new strategic approach to international cooperation in research and innovation. ICT R&D Institutions from EECA countries must be prepared for the challenges and opportunities that Horizon 2020 brings regarding the EU-EECA cooperation.

Those recommendations were discussed, detailed and enriched by project partners, PICTURE Working Group members and other ICT stakeholders during the Validation and Dissemination Workshop which took place in Moscow in November 2012. Furthermore those recommendations served as a base for the elaboration of proposals for pilot actions (see chapter 5) that will be carried out during the next stages of the project. The following table illustrates an overview of the recommendations. Section 5.2 gives a detailed description of the recommendations.

a/a	Recommendation
Reinforcing international dimension of the national ICT research strategies	
1.	Launch of ERA-Net projects
2.	Launch of twinning project(s) with authorities of EU Member States
3.	Improving the quality of programme implementation through systematic evaluation and benchmarking according to international standards
4.	Increase capacities of National Information Points and National Contact Points
5.	Further advancing functional ICT policy dialogue fora between the EU and EECA countries
6.	Development and maintenance of Information System to support cooperation between EECA and EU ICT R&D communities
7.	Increasing the efficiency of national programmes through opening-up to foreign organisations and through trans-national coordination
Strengthening international capacities and dimension of ICT R&D institutions in EECA	
8.	Launch specific EU-EECA Calls for proposals (SICA Calls especially)
9.	Exploit additional 'international collaboration instruments'
10.	Launch national consultation on participation in international cooperation activities
11.	Exploit the Research Diaspora
12.	Preparing and implementing joint benchmarking exercises as well as systematic assessment procedures of research conducting institutions
13.	Twinning activities between research centres or institutes
14.	Implementing SWOT analyses, BSC approaches and foresight exercises in the research conducting institutions
Promotion the participation of the private sector in international ICT R&D projects	
15.	Involve the private sector in national and international ICT policy dialogue
16.	Promote the link of successful EU initiatives, such as centres of excellence, thematic clusters and technology platforms with similar structures in EECA, and enhancing the participation of private companies from EECA in these structures
Getting ready for EU-EECA cooperation under Horizon 2020	
17.	Create a map to connect Horizon's 2020 objectives and the scientific area of "Components, Computing Systems and networks"
18.	Create a map to connect Horizon's 2020 and the scientific area of "Content Technologies and Information Management"

4.2 DESCRIPTION OF RECOMMENDATIONS

1. Reinforcing international dimension of the national ICT research strategies

1. Launch of ERA-Net project(s) to facilitate the exchange of experiences & knowledge transfer
Target Group: National programme directors or managers in EU and EECA
<p>Description and objectives: 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 <i>joint calls</i> (even at a later stage) between the involved EU Member States and EECA countries, 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.</p> <p>Consequently, ERA-NET(s) could offer to the EECA 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, 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 EECA 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.</p> <p>This recommendation aims to establish an ERA network of national and regional public organisations which finance or manage national and/or regional ICT research programmes and provide them with the opportunity to adopt and deploy a step-by-step approach involving four stages:</p> <ol style="list-style-type: none"> 1. Introduce a systematic exchange of information and good practices among national programme owners; 2. Define in detail the common strategic issues and prepare a detailed Action Plan for the implementation of joint activities; 3. Develop and implement common, joint strategic activities from an early stage, mainly related to the convergence of schemes for programme monitoring and evaluation, also including joint monitoring and evaluation; 4. Finance and implement a joint programme consisting of transnational research projects or actions that will evolve in a number of subsequent joint calls for proposals (potentially 2-3 calls).
Challenge addressed: Adjusting the national ICT strategies according to international standards
<p>Next steps:</p> <p>S1: Identify relevant call and establish core consortium (research programme owners/managers). S2: Design and agree on the proposed project work-plan and the relevant national/regional programmes. S3: Finalise and submit the proposal. S4: Project implementation (in case of successful evaluation and negotiation).</p>

288279	PICTURE	Roadmap for PICTURE support to ICT policy dialogue
--------	---------	--

2. Launch of twinning projects with authorities of EU Member States that possess considerable experience on national ICT policy monitoring systems and support structures

Target Group: national policy stakeholders in EU and EECA, national administrators, European Commission

Description and objectives: Launch of twinning project(s) between authorities of EECA and those of EU Member State(s) that could concern the following topics:

- 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.
- The building and running of the national ICT policy monitoring and evaluation system – for those EECA countries that have already started relevant activities (e.g. Russia, Belarus, Ukraine). Know-how transfer on such system will assist the policy makers of EECA 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.

This recommendation aims to deepen mutual learning and capacity building and pave the way for transnational coordination of ICT strategies and implementing instruments across the EU and EECA.

Challenge addressed: Adjusting the national ICT strategies according to international standards

Next steps:

- S1: Identify the appropriate topic / topics.
S2: Investigate possible funding instruments such as ENPI.

3. Improving the quality of programme implementation through systematic evaluation and benchmarking according to international standards

Target Group: political decision makers in EU and EECA, European Commission

Description and objectives: Systematic assessment of effectiveness and efficiency of national programmes using performance indicators to international standards. Conduct of international benchmarking exercises of programme implementation.

This recommendation aims to optimize national ICT programmes as well as processes and tools for their implementation.

Activities proposed:

- Organization of training workshops by experts representing policy makers and programme owners. The attendees (e.g. program owners from EECA countries) are expected to gain knowledge, become more aware, learn joint lessons and develop concepts for advanced evaluation and benchmarking exercises.
- Implementation of pilot exercises by joint EU-EECA teams. The purpose of the exercises will be to test and validate the methodology and also to deepen the mutual learning of programme owners.

Challenge addressed: Adjusting the national ICT strategies according to international standards

Next steps:

- S1: Identify interested policy makers and programme owners both in the EU and in EECA countries.
S2: Identify an appropriate methodology for programme assessment.

288279	PICTURE	Roadmap for PICTURE support to ICT policy dialogue
--------	---------	--

4. Increase capacities of National Information Points and National Contact Points
Target Group: national policy stakeholders in EU and EECA
<p>Description and objectives: Assessment and advancement of the support structures (National Information Points - NIPs, National Contact Points - NCPs) for European and international cooperation building on existing good practice.</p> <p>This recommendation aims to enable the ICT communities of the EECA countries to make optimum use of international cooperation by strengthening the NIPs and NCPs to enable them to provide more professional and easily accessible services in terms of information dissemination and consultancy.</p>
<p>Activities proposed:</p> <p>The possible activities will vary significantly between different EECA countries. Some indicative activities are:</p> <ul style="list-style-type: none"> • Establishment of new NCPs in order to cover the domain of ICT (for countries without ICT NCPs). • Exploitation of networks such as the Enterprise Europe Network (EEN) which create opportunities for networking, access to sources of information and provide an efficient tool for spreading information on a European level. • Establishment and standardisation of processes and practices to be used by the EECA countries NCPs. This is applicable on every single task the NCPs are involved in, with the aim to ensure uniformity and quality of services. Furthermore, the creation of such tools is essential for the promotion, monitoring and administration of the NCP activities. • Improvement of NCPs marketing techniques to entice potential beneficiaries to participate in European and international cooperation projects.
Challenge addressed: Make optimum use of international cooperation
<p>Next steps:</p> <p>S1: Analyze the system of National Contact Points in EU Member States to detect successful practices that could be deployed in EECA countries</p> <p>S2: Formulate an action plan based on the above analysis</p> <p>S3: Identify an appropriate funding programme</p> <p>S4: Elaborate and submit a proposal to receive funding from the selected funding programme.</p>

5. Further advancing functional ICT policy dialogue fora between the EU and EECA countries

Target Group: national policy stakeholders in EU and EECA, European Commission

Description and objectives: Assessment of present formats of ICT policy dialogue among both regions. Support for the generation of a knowledge base in order to ensure updated and easy to use information regarding the ICT policy dialogue participants.

This recommendation aims to identify options for the ICT policy dialogue to become more efficient and effective as well as to increase the active participation of the countries in both regions in such policy dialogue fora.

Activities proposed:

- Establishment of periodic ICT events with EU representative's attendance in all EECA countries in order to facilitate the ICT policy dialogue with the international community.
- Creation of a knowledge base of the ICT policy dialogue participants through relevant data collection and analytical studies. At this point, relevant Coordination and Support Actions within the EU RTD Framework Programme, could be exploited (e.g. the EU-EECA ICT Competence Platform which was created by three clustering projects: SCUBE-ICT, ISTOK-SOYUZ and EXTEND and is now maintained by PICTURE project).

Challenge addressed: Make optimum use of international cooperation

Next steps:

- S1: Assess the present formats of ICT policy dialogue between the EU and the EECA countries
 S2: Based on the above assessment, introduce advanced mechanisms for a functional ICT policy dialogue. Those mechanisms could include a floor for regular information exchange on national and international strategies, a respective clearing house for joint ideas and activities and a coordination forum for needs, suggestions and proposals targeting various aspects related to ICT policy dialogue.
 S3: Set up the specifications for a knowledge base of the ICT policy dialogue participants.
 S4: Collect the necessary data to create the knowledge base.
 S5: Launch, maintain and update the knowledge base.

6. Development and maintenance of Information System to support cooperation between EECA and EU ICT R&D communities

Target Group: ICT R&D stakeholders in EU and EECA

Goal: To support policy dialogue between the European Union and EECA countries in the area of ICT R&D by means of advancement of information and decision-making support of the relevant stakeholders (government bodies, professional associations, universities and businesses)

Mission: To increase the effectiveness and intensity of cooperation between the EECA and EU ICT R&D communities by developing an advanced information system, that will provide relevant stakeholders with necessary information for decision making on all levels (government bodies, professional associations, universities and businesses).

Description: Based on lessons learnt during previous relevant projects (ISTOK-SOYUZ, SCUBE-ICT and EXTEND), it is considered that EECA-EU ICT R&D dialogue can benefit from a wide but flexible and user friendly Web 2.0 information system to serve as a specific data-base and social network at the same time. This will increase both the quality and intensity of cooperation because it will bring to the table new actors which still are poorly involved into the dialogue for the simple reason of absence of the relevant infrastructure. High level political decisions in the contexts of existing dialogues schemes between EECA countries and the EU have to be the products of a wide professional discussion which can be effectively organized only with the help of such a network which will contain the information about people, projects, partners, funding opportunities, etc. The mission of the suggested project is to fill this gap and make the dialogue and collaboration in ICT R&D between EECA countries and the European Union more efficient and open for the ICT community.

Objectives:

- To analyze the current state of information support of the ICT R&D cooperation between the EECA countries and the EU;
- To develop, test and implement the information system and introduce it to the stakeholders;
- To organize events, providing information and training for the stakeholders (both in EU and EECA) in using the information system.

The information system will ensure the new quality of EECA – EU ICT R&D cooperation by means of:

- strengthening cooperative research links between EECA and EU;
- providing new opportunities for EECA and EU stakeholders to establish and develop mutually beneficial partnerships based on available synergies;
- Ensuring timely access for the political decision makers to grassroots level information needed for preparation of national and regional dialogue meetings;
- facilitating the process of identifying common R&D priorities and future cooperation opportunities;
- reinforcement of better networking between European ICT technology platforms and relevant associations in EECA countries.

Activities proposed:

- Producing Report on Status Quo of information support of the EECA-EU ICT R&D cooperation.
- Development and maintenance of Web 2.0 based information system with networking instruments and databases for communication between ICT communities in EECA countries and the EU.
- Establishment of a network of support units in EECA and EU countries to support implementation and maintenance of the Information system by the users.

288279	PICTURE	Roadmap for PICTURE support to ICT policy dialogue
--------	---------	--

- Series of presentations and trainings in the EECA countries aimed at introducing the new facility for the target audience.
- Sustainability plan on the Information system support after the end of the pilot project.
- Media and outreach project activities in the EECA countries and the EU.

Challenge addressed: Weakness of professional dialogue between EECA and EU ICT R&D communities

Next steps:

- S1: Identify relevant call and establish core consortium (research programme owners/managers).
S2: Design and agree on the proposed project work-plan and the relevant national/regional programmes.
S3: Finalise and submit the proposal.
S4: Project implementation (in case of successful evaluation and negotiation).

7. Increasing the efficiency of national programmes through opening-up to foreign organisations and through trans-national coordination

Target Group: national and international program owners in EU and EECA

Description and objectives: Targeted opening of national ICT programmes in EU and EECA countries to foreign organisations. Targeted trans-national coordination of funding programmes (e.g. joint calls).

This recommendation aims to increase the knowledge base of national research organizations and to benefit from international ICT resources and infrastructures, through the participation of foreign research organizations in national ICT programmes. It also aims to overcome fragmentation and to increase the efficiency of research funding in both the EU and EECA through joining resources of programme owners on the basis of a common interest and joint priority setting.

Activities proposed:

- Opening of selected national ICT programmes to foreign organisations.
- Utilization of dedicated coordination and support activities within the 7th EU RTD Framework Programme for issuing joint calls and programmes in areas of specific interest.

Challenge addressed: Make optimum use of international cooperation

Next steps:

Targeted opening of national ICT programmes to foreign organisations

- S1: Identify suitable national ICT programmes in EU and EECA countries.
S2: Design and implement a preparatory plan for opening up the national ICT programmes to foreign organisations.
S3: Provide information dissemination and consultancy services to interested foreign organisations.

Targeted trans-national coordination of funding programmes

- S1: Identify interested programme owners (at least one from an EU Member State and one from an EECA country) on the basis of a common interest and joint priority setting.
S2: Design joint calls and programmes in areas of specific interest to participating programs owners
S3: Find suitable funding tools for the implementation of the above joint calls and programmes.

288279	PICTURE	Roadmap for PICTURE support to ICT policy dialogue
--------	---------	--

2. Strengthening international capacities and dimension of ICT R&D institutions in EECA

8. Launch specific EU-EECA Calls for proposals (SICA Calls especially)

Target Group: European Commission

Description and objectives: Launch of collaborative Calls for Specific International Cooperation Actions (SICA) including the EECA region as a target.

This recommendation aims to support the integration of the ICT RTD actors from the EECA region into European research programmes, to promote their competencies in EU and to enhance their awareness and skills towards EU funded activities.

Challenge addressed: Increasing the participation of ICT R&D Institutions from EECA countries to EU funded activities

Next steps:

Identify and propose specific topics for SICA calls based on the scientific and technological level and needs of the involved countries. Note: PICTURE project has already identified specific ICT research topics for SICA calls (deliverable D2.1: Updated report about the EECA ICT priorities).

9. Exploit additional 'international collaboration instruments'

Target Group: national policy stakeholders in EECA and responsible authorities in EU

Description and objectives: In addition to FP7 programmes, European Commission disposes various funding instruments that can be used for the support of EECA ICT R&D Institutions. 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, the Romania-Moldova-Ukraine, the Georgia-Armenia, the Azerbaijan-Georgia),
- European Neighbourhood and Partnership Instrument (ENPI).
- Development Cooperation Instrument (DCI),
- The Tempus programme.

This recommendation aims to promote the competencies of EECA ICT research teams and support their integration into international consortia.

Activities proposed:

- Exploration of the above mentioned funding tools and identification of funding opportunities for ICT R&D related projects.
- Matching of the identified opportunities with the needs and priorities of the interested EECA countries.
- Preparation of a guide with the funding opportunities that the above funding tools provide for ICT related projects.

Challenge addressed: Increasing the participation of ICT R&D Institutions from EECA countries to EU funded activities.

Next steps:

S1: Make a realistic assessment of the needs in ICT development as well as of the expected impact for each interested EECA country.

S2: Contact the local authorities that are in charge of the negotiations with EU and the implementation of such projects.

S3: Elaborate and submit proposals to be addressed to the owners of the above funding schemes.

288279	PICTURE	Roadmap for PICTURE support to ICT policy dialogue
--------	---------	--

10. Launch national consultation on participation in international cooperation activities
Target Group: national policy stakeholders in EECA countries
Description and objectives: Launch national consultation on participation in international cooperation activities. This recommendation aims to provide the authorities in EECA countries with sufficient information regarding the conditions that are affecting ICT actors within the process of participation in EU-funded research activities.
Activities proposed: <ul style="list-style-type: none"> • Development of a wide consultation process involving 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 participation in EU-funded research activities. This process could include an on-line consultation followed by dedicated round tables. • Preparation of a document with the main outcomes of the above process. This document will present the main barriers that hinder EECA ICT organisations to be involved in international cooperation activities, together with proposed measures to simplify and/or successfully address (to the extend this is possible) the identified barriers.
Challenge addressed: Addressing the barriers that hinder EECA ICT research and industrial organisations to be involved in international cooperation activities
Next steps: S1: Identification of the persons and organisations that will participate in the consultation S2: Issuing a program for the meetings of the participants S3: Provision of coordination and secretary services during the meetings S4: Prepare a document with the outcomes of the whole process
11. Exploit the Research Diaspora
Target Group: national policy stakeholders, Research and Business Communities in EECA countries
Description and objectives: Research Diaspora is the highly qualified EECA PhD students, professors, researchers, etc that already work in EU. This 'scientific capital' constitutes a unique ' <i>multiplier</i> ' for promoting the scientific excellence that exists in the EECA countries, as they are familiar with the existing competencies and achievements of the leading EECA research actors. This recommendation aims to limit the communication barriers and support the initiation of international collaborations between the EU and the EECA countries.
Activities proposed: <ul style="list-style-type: none"> • Creation of databases with ICT experts from EECA countries living in EU countries that are willing to participate in activities that foster the ICT R&D policy dialogue between the EU and the EECA countries. • Creation of virtual communities in social media (such as LinkedIn). A virtual community will be created for each interested EECA country, consisting of local ICT experts and of ICT experts living in EU countries (research diaspora).
Challenge addressed: Increasing awareness in Europe about the EECA ICT research institutions
Next steps: S1: Identify ICT experts from EECA countries that are currently living in EU countries. S2: Contact the above experts and ensure their cooperation S3: Keep the experts "active" (e.g. by inviting them to awareness, training and networking activities organised in EECA)

12. Preparing and implementing joint benchmarking exercises as well as systematic assessment procedures of research conducting institutions

Target Group: national policy stakeholders in EECA and the EU

Description and objectives: Planning and implementation of systematic assessment procedures and benchmarking exercises of research institutions in several EU and EECA countries, based on internationally accepted standards.

This recommendation aims to become a mutual learning exercise between EU and EECA countries that will highlight best practices, contributing at the same time to the improvement of the performance of the participating institutions.

Activities proposed:

- Prepare an adequate methodology for the assessment based on good practices already in place in several EU member States.
- Perform pilot assessments in interested EECA countries.
- Identify interested similar research performing institutions in EECA and EU countries.
- Plan and implement benchmarking exercises for the above institutions, based on internationally accepted standards and procedures available in EU member states.

Challenge addressed: Improving the Performance of ICT Institutions

13. Twinning activities between research centres or institutes

Target Group: national policy stakeholders and research community in EECA and the EU

Description and objectives: Provision of the necessary framework conditions and incentives for twinning arrangements between research centres or institutes in EECA and the EU.

This recommendation aims to facilitate the exchange of knowledge and good practices between similar or complementary research centres or institutes in EECA and the EU.

Activities proposed:

- Identify interested research centres and institutions.
- Define the specific twinning activities. Some indicative activities are:
 - Exchange of staff and young researchers.
 - Setting-up joint research projects.
 - Joint participation in international projects.
- Prepare written agreements (e.g. memoranda) between the respective research entities.

Challenge addressed: Improving the Performance of ICT Institutions

288279	PICTURE	Roadmap for PICTURE support to ICT policy dialogue
--------	---------	--

14. Implementing SWOT analyses, BSC approaches and foresight exercises in the research conducting institutions
Target Group: national policy stakeholders and heads of ICT R&D institutions in EECA
<p>Description and objectives: Implementation of institutional SWOT analyses, Balanced Score Card approaches, and foresight exercises enabling the development of strategies and institutional roadmaps that will strengthen the role of the institutions in the national research system.</p> <p>This recommendation aims to assist involved institutions in defining their internal strategies and roadmaps in terms of: optimum balance between basic and applied research; setting up multidisciplinary research programmes; planning vacancies for new staff; reorganizing the research teams; defining equipment needs, etc.</p>
<p>Activities proposed:</p> <ul style="list-style-type: none"> • Identify interested research institutions. • Prepare adequate methodological tools and guidelines for their implementation. • Execute the SWOT analysis, BSC approach and foresight exercise for each involved institution. • Draw conclusions based on the above analysis.
Challenge addressed: Defining the strategy and orientation of ICT research institutes

3. Promoting the participation of the private sector in ICT R&D projects

15. Involve the private sector in national and international ICT policy dialogue
Target Group: national policy stakeholders in EECA and the EU
<p>Description and objectives: Further involvement of the representatives of the most active players in the private sector in the national and international ICT dialogue processes and fora.</p> <p>This recommendation aims to better identify private sector's needs and expectations and to advance the academia - industry relationship.</p>
<p>Activities proposed:</p> <ul style="list-style-type: none"> • Identify interested key players in the private sectors of the EECA countries. • Create a database with the above key players to facilitate communication. • Organize a series of EU-EECA Policy Stakeholders Conferences in order to bring together policy makers and representatives of the private sector.
Challenge addressed: Increasing the Engagement of the Private Sector in ICT R&D and Advancing the Academia-Industry Relationship

16. Promote the link of successful EU initiatives, such as centres of excellence, thematic clusters and technology platforms with similar structures in EECA, and enhancing the participation of private companies from EECA in these structures

Target Group: stakeholders of centres of excellence, thematic clusters and technology platforms in the EU and EECA

Description and objectives: Promotion of the links among centres of excellence, thematic clusters, Technology Platforms (TPs) and the Joint Technology Initiatives (JTIs) in the EU and EECA in the fields of:

- Components, Computing Systems and Networks.
- Content technologies and information management.

Promotion of the involvement of private sector of the EECA countries in the above initiatives.

This recommendation aims to:

- bring together the private and academic sectors as well as national or regional authorities of the EECA countries;
- allow mutual learning, sharing experience and possibly joining forces among such structures in the EU and EECA;
- stimulate the engagement of the private sector of EECA countries in ICT research.

Activities proposed:

Promotion of the links among centres of excellence, thematic clusters, Technology Platforms (TPs) and the Joint Technology Initiatives (JTIs) in the EU and EECA

- map relevant projects / teams funded in EECA countries in the relevant fields;
- map strong teams working on similar fields in EU;
- check interest to cooperate;
- organize joint activities;
- provide support to structures from EECA countries for path finding missions;
- implement actions aiming at an increased visibility of structures in EECA towards structures in the EU;
- prepare ground for future deployment of activities after the end of PICTURE project.

Promotion of the involvement of private sector of the EECA countries in the above initiatives

- preparation of the modalities and conditions for the participation of private sector in these initiatives (e.g. IPR issues);
- elaborate a well structured information and dissemination plan (e.g. dedicated brokerage events) in order to attract players in the private sector not familiar with such initiatives;

Challenge addressed: Increasing the Engagement of the Private Sector in ICT R&D and Advancing the Academia-Industry Relationship

288279	PICTURE	Roadmap for PICTURE support to ICT policy dialogue
--------	---------	--

4. Getting ready for EU-EECA cooperation under Horizon 2020

17. Create a map to connect Horizon’s 2020 objectives and the scientific area of “Components, Computing Systems and networks”
Target Group: national policy stakeholders and science community in EECA
Description and objectives: Creation of a map that will match the main research topics related to the scientific area of “Components, Computing Systems and networks” with the structure and objectives of Horizon 2020 and mainly its societal challenges. The map will take into account the identified EECA ICT research priorities for cooperation with the EU. If necessary these priorities will be updated and rephrased to comply with Horizon 2020.
<p>This recommendation aims to identify funding opportunities for ICT R&D Institutions from EECA countries related to the scientific area of “Components, Computing Systems and networks” under Horizon 2020.</p>
Activities proposed: <ul style="list-style-type: none"> • Analyze Horizon’s 2020 objectives and mainly the societal challenges in relation with research topics of interest to the EECA countries and related to the scientific area of “Components, Computing Systems and networks”. • Find convergence points that potentially could develop into projects to be funded under Horizon 2020. • Create a report (“map”) with the findings and conclusions of the above procedure.
Challenge addressed: Facilitating the participation of ICT R&D Institutions from EECA countries to Horizon 2020.

18. Create a map to connect Horizon’s 2020 objectives and the scientific area of “Content Technologies and Information Management”
Target Group: national policy stakeholders and science community in EECA.
Description and objectives: Creation of a map that will match the main research topics related to the scientific area of “Content Technologies and Information Management” with the structure and objectives of Horizon 2020 and mainly its societal challenges. The map will take into account the identified EECA ICT research priorities for cooperation with the EU. If necessary these priorities will be updated and rephrased to comply with Horizon 2020.
<p>This recommendation aims to identify funding opportunities for ICT R&D Institutions from EECA countries related to the scientific area of “Content Technologies and Information Management” under Horizon 2020.</p>
Activities proposed: <ul style="list-style-type: none"> • Analyze Horizon’s 2020 objectives and mainly the societal challenges in relation with research topics of interest to the EECA countries and related to the scientific area of “Content Technologies and Information Management”. • Find convergence points that potentially could develop into projects to be funded under Horizon 2020. • Create a report (“map”) with the findings and conclusions of the above procedure.
Challenge addressed: Facilitating the participation of ICT R&D Institutions from EECA countries to Horizon 2020.

5 PILOT ACTIONS

5.1 INTRODUCTION

The recommendations of the previous chapter were presented and discussed with the attendees (project partners, PICTURE Working Group members and other ICT stakeholders) of the validation and dissemination workshop that took place in Moscow (November 2012). The outcomes of the above discussions led to the selection of three recommendations to be implemented as **pilot actions** during the next stages of the project:

- Pilot Action 1: «**Preparing the ground for the development of an information system to support the policy dialogue and the cooperation between the EU and the EECA region in the area of ICT R&D**» to be implemented under Working Group 1: International R&D ICT Cooperation Policies.
- Pilot Action 2: «**Bridging the European and EECA knowledge networks in the field of “Components, Computing Systems and Networks” to give a joint response to global challenges**» to be implemented under Working Group 2: Components, computing systems and networks.
- Pilot Action 3: «**Bridging the European and EECA knowledge networks in the field of “Content Technologies and Information Management” to give a joint response to global challenges**» to be implemented under Working Group 3: Content technologies and information management.

The selection was based on the following factors:

- Relevance to EECA countries needs and priorities.
- Avoidance of work overlapping between pilot actions.
- Horizon’s 2020 objectives and key priorities.
- Outcomes of Moscow’s validation and dissemination workshop.
- PICTURE limitations and resources.

Sections 5.2, 5.3 and 5.4 give a brief description of the planning for each pilot action. Detailed descriptions can be found in deliverable D4.1: «Report on planning for implementation of pilot actions».

5.2 PILOT ACTION FOR WORKING GROUP 1

<p>Title: Preparing the ground for the development of an information system to support the policy dialogue and the cooperation between the EU and the EECA region in the area of ICT R&D</p>
<p>Description: According to the conclusions of the PICTURE Validation and Dissemination Workshop (29/11/2012, Moscow, RU), the development of an information system to support the ICT policy dialogue and to facilitate the cooperation between EU and EECA ICT research and industrial communities is considered as one of the most effective ways to enhance the level of international cooperation in the EECA region.</p> <p>The proposed information system could provide various services to the involved stakeholders including:</p> <ul style="list-style-type: none"> • Information about funding opportunities both under EU programmes and EECA national programmes focusing on those that support the international cooperation. • A database with key EECA ICT actors and their competencies. • Various documents on the EU-EECA ICT cooperation potential (e.g. policy dialogue meetings minutes, national and thematic reports, etc). • Networking instruments to support the collaboration and the interaction between the ICT communities from both regions. <p>The actual development of the information system is beyond the scope of this Pilot Action and of PICTURE project in general. This pilot action aims to prepare the ground for the implementation of such a system by identifying the information needs of the potential users and defining its main functions.</p>
<p>Objectives:</p> <ol style="list-style-type: none"> 1. To promote and strengthen cooperation and interaction among academia, research organisations and industry from EU and the EECA region in the ICT field. 2. To support the ICT policy dialogue between the EU and the EECA countries. 3. To help EECA countries make optimum use of international cooperation. 4. To allow a direct interaction between policy makers and representatives of the ICT community and the civil society of the EECA region. 5. To support the involvement of EU researchers into EECA RTD programmes and vice versa.
<p>Activities proposed:</p> <ol style="list-style-type: none"> 1. Identification of information and support needs: The information and support needs of the potential users will be collected via a short but comprehensive questionnaire. Each EECA partner will collect and analyze a small but indicative number of completed questionnaires. 2. Proposal for the main functions that the information system should perform: The identified information and support needs will be presented during the next meeting of Working Group 1 that will take place in Yerevan on September 2013. Based on the above discussion and further interactions with key EECA ICT stakeholders or WG2 and WG3 members, PICTURE project will prepare a proposal with the main functions that the information system should perform. The proposal for the main functions that the information system should perform will be adjusted according to the feedback that will be received from EECA policy makers and program owners and will be validated during PICTURE final dissemination event. 3. Sum up of outcomes and lessons learnt during the implementation of the pilot action.
<p>Expected results: This pilot action aims to set up the requirements (users' needs and basic functions) for an information system that will support the policy dialogue and the cooperation between the EU and the EECA region in the area of ICT R&D. Due to resources constrains the development of the information system will not take place under this pilot action. The results of this pilot action will benefit future projects that will implement the proposed information management system.</p> <p>Of course any useful material that may be developed under this pilot action (e.g. profiles of EECA ICT actors, profiles of EU and EECA funding programmes, etc.) will be available for future projects that will undertake the development and operation of the proposed information system and will be published on PICTURE portal to be used by the R&D communities from both regions</p>

5.3 PILOT ACTION FOR WORKING GROUP 2

Title: Bridging the European and EECA knowledge networks in the field of “Components, Computing Systems and Networks” to give a joint response to global challenges

Description: This pilot action aims at bringing together from the one hand the European Technology Platforms (ETPs), and from the other hand similar structures and interested stakeholders from EECA countries in the field of “Components, Computing Systems and Networks”.

PICTURE project will firstly identify relevant structures in EECA countries and then will investigate the feasibility of creating links with ETPs to enhance the participation of private companies from EECA. Research areas of mutual interest will be searched to become common ground for future joint activities. Recommendations will be developed regarding the potential collaboration between ETPs and relevant structures in the EECA region.

Objectives:

1. To increase the visibility of ETPs in the academic and business community of EECA countries.
2. To increase the visibility of similar structures from EECA countries in the EU.
3. To foster the cooperation between the ETPs and similar structures in EECA countries by identifying areas of common interest in the light of HORIZON 2020 societal challenges.

Activities proposed:

1. **Identification of common research priorities in the light of HORIZON 2020:** PICTURE project will develop a map that connects HORIZON’s 2020 societal challenges and ETPs research priorities in the field of “Components, Computing Systems and Networks” with those relevant for the EECA region.
2. **Participation of ETPs representatives in Workshop on Components, Computing Systems and Networks:** PICTURE project, will attempt to ensure the participation of representatives from ETPs in the above Workshop (Yerevan, September 2013) with the purpose to validate the common research priorities and to identify potential joint activities for future cooperation between the involved ETPs and the EECA region.
3. **Elaboration of recommendations for potential cooperation between ETPs and relevant structures in EECA region.**
4. **Participation of ETPs representatives in final dissemination event:** PICTURE project will invite representatives from ETPs to participate in the above event (Minsk, April 2014) with the purpose to validate the recommendations for potential cooperation between the ETPs and the relevant EECA structures.
5. **Sum up of outcomes and lessons learnt during the implementation of the pilot action.**

Expected results:

- Increased visibility of involved ETPs toward the EECA region.
- Increased visibility of relevant structures in EECA towards the EU.
- Promoted linkage between ETPs and relevant structures in EECA.
- Improved operation of existing relevant structures in EECA based on the lessons learned and the accumulated experience of the involved ETPs.
- A framework for cooperation between ETPs and relevant structures in EECA region under HORIZON 2020.

5.4 PILOT ACTION FOR WORKING GROUP 3

Title: Bridging the European and EECA knowledge networks in the field of “Content Technologies and Information Management” to give a joint response to global challenges

Description: This pilot action aims at bringing together from the one hand the European Technology Platforms (ETPs), and from the other hand similar structures and interested stakeholders from EECA countries in the field of “Content Technologies and Information Management”.

PICTURE project will firstly identify relevant structures in EECA countries and then will investigate the feasibility of creating links with ETPs to enhance the participation of private companies from EECA. Research areas of mutual interest will be searched to become common ground for future joint activities. Recommendations will be developed regarding the potential collaboration between ETPs and relevant structures in the EECA region.

Objectives:

1. To increase the visibility of ETPs in the academic and business community of EECA countries.
2. To increase the visibility of similar structures from EECA countries in the EU.
3. To foster the cooperation between the ETPs and similar structures in EECA countries by identifying areas of common interest in the light of HORIZON 2020 societal challenges.

Activities proposed:

- 1. Identification of common research priorities in the light of HORIZON 2020:** PICTURE project will develop a map that connects HORIZON’s 2020 societal challenges and ETPs research priorities in the field of “Content Technologies and Information Management” with those relevant for the EECA region.
- 2. Participation of ETPs representatives in Workshop on Content Technologies and Information Management:** PICTURE project, will attempt to ensure the participation of representatives from ETPs in the above Workshop (Kiev, May 2013) with the purpose to validate the common research priorities and to identify potential joint activities for future cooperation between the involved ETPs and the EECA region.
- 3. Elaboration of recommendations for potential cooperation between ETPs and relevant structures in EECA region.**
- 4. Participation of ETPs representatives in final dissemination event:** PICTURE project will invite representatives from ETPs to participate in the above event (Minsk, April 2014) with the purpose to validate the recommendations for potential cooperation between the ETPs and the relevant EECA structures.
- 5. Sum up of outcomes and lessons learnt during the implementation of the pilot action.**

Expected results:

- Increased visibility of involved ETPs toward the EECA region.
- Increased visibility of relevant structures in EECA towards the EU.
- Promoted linkage between ETPs and relevant structures in EECA.
- Improved operation of existing relevant structures in EECA based on the lessons learned and the accumulated experience of the involved ETPs.
- A framework for cooperation between ETPs and relevant structures in EECA region under HORIZON 2020.