Senior Officials Working Group on ICT

Thematic Report

Elaborated by CONICYT (Chile) and VTT (Finland)

V EU-CELAC Senior Officials Meeting

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Contents

1   Objective of the thematic report

- To inform about progress of activities on each Thematic Senior Officials Working Group (SOM WGs), underlining the strategic contribution to the JIRI Roadmap and the EU-CELAC Common Research Area
- To present concrete proposals to be implemented by the WGs in synergy with ongoing related projects and initiatives.
- To forward recommendations for SOM deliberations: i) Ideas to enhance biregional cooperation on R&I and future sustainability beyond lifetime of ongoing supporting projects and initiatives; ii) Reflections towards HORIZON 2020, focused on calls, participant rules & new instruments and opportunities.
- To define next Activity Plan 2016-2017, including concrete actions and resources to be committed.

2 Bi-regional Cooperation Activities in the ICT thematic Area

2.1 Thematic area background in Latin America, Caribbean and the European Union

The ICT theme is horizontal to today's societal challenges and has the potential to support the development of global priorities of the EU and LAC regions through a multidisciplinary approach which includes multiple fields of application. Therefore, the work of the ICT group has focused on four main areas: e-Inclusion; e-Health; Smart Cities; and Living Labs. These four topics have been previously identified by the SOM Working Group on ICT as central for the development and cooperation between both regions.

ICT have been widely developed in the last decades: infrastructure, hardware, software and applications have the potential of creating a hyper-connected world and represent an effective mean to tackle societal challenges. But these developments have yet to be deployed evenly to allow inclusiveness and uniform delivery of public services, creating a digital and economic divide between and across societies. Another factor which has hindered the uniform implementation of ICT solutions within and between countries and regions has been the lack of coordination among initiatives at the government, research and societal levels.

Nevertheless there is a wide cooperation between EU and LAC in the ICT field, ranging from research cooperation to joint entrepreneurship and established technology platforms in Internet of the Future. In a short overview, there is an enhanced cooperation around the following topics: e- Health, Future Internet, Intelligent Transportation Systems, Internet and Internet of Things, Education and Climate Change.

The European Union (EU) – Latin America and Caribbean (LAC) Summit in 2010 led to the adoption of the Madrid Action Plan in order to develop and reinforce bi-regional cooperation in six fields. The first of these fields is Science, Research, Innovation and Technology.

Political framework: EU-CELAC Senior Official Meetings (JIRI), EU-CELAC Summits (Action Plan 2013-2015)

The main objective in this area is to develop the "EU-LAC Knowledge Area" through:

i) Improving cooperation in research and innovation;

ii) Strengthening scientific and technological capacities, and infrastructures;

iii) Supporting research, innovation and knowledge sharing taking into account the contribution of ancestral and traditional knowledge;

iv) Boosting the use of new technologies and technology transfer underpinning sustainable socio-economic development;

v) Fostering cooperation between both regions with respect to the digital economy and the reduction of the digital divide for improving competitiveness while making social inclusion a cross-cutting issue.

The Joint Initiative for Research and Innovation, called JIRI, was endorsed by the 2010 Madrid Summit Action Plan. Its mandate is, among others, to "establish regular bi-regional dialogue on science, research, technology and innovation to consolidate EU-LAC cooperation and to update common priorities, encourage

mutual policy learning and ensure the proper implementation and effectiveness of cooperation instruments".

Five senior officials working groups were established in 2011 within the JIRI to mobilize stakeholders on priority areas of mutual interest. Calling on a wide range of experts from both regions with the support of several INCONETs, the five thematic working groups are the following:

- Bioeconomy including food security – co-led by Argentina and France

- Information and Communication Technologies (ICT) for meeting societal challenges – co-led by Chile and Finland

- Biodiversity and Climate Change – co-led by Colombia and France

- Energy – co-led by Mexico and Spain

- Funding and good practices for collaboration and early career development – co-led by Mexico and Portugal, the last one with support from Chile and Finland

The thematic working groups have narrowed down objectives for the short and medium term and outlined concrete activities and funding options to be further elaborated for bi-regional cooperation in their focus areas. In 2013, a sixth Working Group was created in the area of Health.

The main aim of the Working Group on ICT for Societal Challenges is to enhance the cooperation and integration of Latin America and the Caribbean (LAC) and the European Union (EU) in ICT and thereby contribute to the mutual development of policies and inclusiveness in the field.

With the aim of targeting the societal challenges broadly, the work of the ICT group is focused on e-Inclusion, e-Health, Smart Cities, and Living Labs, addressing challenges in the fields of social cohesion, inclusiveness, sustainability and innovation for the benefit of the populations both in Latin America and the Caribbean and Europe. These four topics have been identified by the SOM Working Group on ICT as central for the development and cooperation between both regions.

The thematic priorities developed and implemented by the ICT working group are:

- Mapping of current and past bilateral and bi-regional ICT projects in the areas of e-Inclusion, e-Health, Smart Cities and Living Labs. The data base included more than 200 projects and 1800 researchers and stakeholders.

- Latin American and Caribbean Network of Living Labs connected to the European Network of Living Labs (ENoLL), created in 2012.

- Thematically oriented Latin American Technology Platforms connected with European Technology Platforms, to be carried out in 2014-2015.

- Network of Smart Cities: promote the opportunities for cooperation among Latin American and European megacities.

- Promote the topics related to ICT in the ERANet-LAC call.

2.2   Description of activities

Below is a description of the main achievements of Work Package 3 during period 1 and period 2 of the ALCUE NET project. The aim of this work package is to enhance the cooperation and integration of Latin America and the Caribbean and the European Union in ICT and thereby contribute to the mutual development of both regions in this field.

Additionally, other activities have been developed in ICT between the EU and CELAC countries, these have been mapped and included in this report in order to present an extended view of initiatives that are contributing to the JIRI Roadmap.

2.2.1   ALCUE NET: Identifying the bi-regional knowledge base and the potential for enhanced cooperation

Period 1: December 2012 – May 2014

• **Mapping of EU-CELAC ICT Cooperation Projects and Joint Workshop**

CONICYT (Chile), alongside with VTT (Finland) and FCT (Portugal) have collected information from LAC and European funding agencies on funding for ICT research in order to identify the specific topics with the greatest potential for successful EU-LAC research collaboration. This effort allowed to the ALCUE NET project to identify and engage all Latin American and Caribbean researchers and stakeholders in a joint database with more than 200 projects comprising over 1800 researchers and stakeholders reviewed, in order to provide a complete and comprehensive overview of the cooperation of key actors in ICT.

The final list, converted into a database, includes almost 150 projects and was analyzed by experts from the ICT WG co-leader countries, Finland and Chile, which identified the research projects with more potential to collaborate, in two specific areas related to E-Inclusion – particularly e-Health for remote areas, and Smart Cities.

The outcome of this mapping exercise showed the state of the art of current ICT research between both regions. In geographical terms, the most active countries are Brazil, Chile, Argentina, Colombia, Uruguay and Peru, on the LAC side, and France, Spain, United Kingdom, Italy and Germany on the EU side. Also China, India, United States and Israel are cooperation partners on ICT with the EU-LAC region.

In terms of fields and technologies, the selection of the topics was done observing the projects analyzed in terms of technological developments and field applications. The outcome showed a very wide range of topics covered through the current EU-LAC cooperation. The following is a brief overview of the findings of the mapping by the number of projects financed per topics:

Mapping of EU-LAC ICT projects		
Number of projects and Field	**Number of projects and Fields**	**Number of projects and Fields**
(13) e-Health	(2) Algorithms	(1) Intelligent Transport System
(10) Future Internet	(1) Voice recognition	(1) Content Languages
(10) Intelligent System and Transport	(1) Ubiquitous Computing	(1) Content and Mobility
(6) Internet and Internet of things	(1) Serious Games	(1) Communication Networks
(6) Education	(1) Remote Connectivity	(1) Communication
(5) Climate/Climate change	(1) Rehabilitation	(1) Collaboration
(3) Telecommunications	(1) Radio Communication	(1) Children Protection
(3) Cloud Computing	(1) Perception	(1) Bioinformatics
(2) Image Recognition	(1) Networking	(1) Augmented Reality
(2) Energy and Energy Efficiency	(1) Multimedia Content	(1) Astronomy
(2) Computer	(1) Mining	(1) Artificial Intelligence
(2) Big Data	(1) Mathematical Modelling	(1) Aerospace
	(1) Living Labs	(1) Active Ageing

Regarding the ICT projects with a bi-regional dimension funded by the Seventh Framework Programme, it is noticeable that there has been a very strong and continuous support in FP7 for the bi-regional dimension of research in ICT and e-Infrastructures.

Hereunder is an overview of selected FP7 projects with a bi-regional scope. Broadly, the projects can be divided into two categories:

1. ICT research projects or projects in E-Infrastructures oriented towards EU-LAC cooperation
2. Coordination and support actions of the political dialogue in ICT

Concerning the first category and for the purpose of this report, we have only selected projects with a specific bi-regional scope in the research carried out, leaving out ICT projects with participation of specific Latin American countries but oriented towards general research topics. With this in mind, there is a predominance of projects focused on the following areas:

- e-Health, with COMOESTAS, MEDNET and ACTION-Grid;
- e-Infrastructures, with EELA-2, ACTION-Grid, GISELA, ELCIRA, RISC and EVALSO;
- Free and open software, with FLOSSINCLUDE; and
- Networked Electronic Media, with SALA+ and SALA3D.

- **Networking of key actors and stakeholders**

CONICYT, jointly with VTT, organized a Thematic Workshop on Information and Communication Technologies on March 19-20 2014 in Santiago de Chile. Over 40 experts were convened to discuss the two topics recommended for funding at the 2014 Senior Officials Meeting in Costa Rica, which were endorsed to be funded by ERANet LAC:

- Improving wellbeing through inclusive e-Health;
- Smarter, inclusive and sustainable cities.

The main outcomes of the Workshop were:

- ICT experts and stakeholders learnt about the main ICT updates in the EU-LAC regions
- ICT experts and stakeholders expanded their network in the field and were able to identify future project opportunities with colleagues from other countries that were working on similar topics.
- Two topic suggestions were defined and developed in the ICT Thematic Report.

2.2.2 ALCUE NET: Collaboration between European and Latin American ICT Technology Platforms

Period 2: June 2014 – November 2015

- **Latin American ICT Technology Platforms Meeting, Guadalajara (Mexico), October 1st 2014**

With the objective of further developing and promoting the Technology Platforms (TPs) established under the FIRST project between the EU and LAC, the ALCUE NET Project included among its activities a specific task to promote collaboration between European and Latin American ICT Technology Platforms (LATPs). The FIRST Project had already created Technology Platform in Argentina, Mexico, Colombia, Brazil and Chile.

The initial idea was to organize two meetings directly with fellow European Technology Platforms (ETPs) in order to raise awareness in Europe on the LATPs, but after a first assessment the ALCUE NET Project concluded that not all LATPs were at the same level of evolution, the structures were not the same in each country and, additionally, another Project financed under the European Commission, CONECTA 2020, was undergoing the task of working with new LATPs and should be included.

Under these circumstances, it was decided that a first meeting should include only the Latin American Technology Platform in order to prepare the process before formalizing a collaboration with ETPs.

The "Latin American ICT Technology Platforms Meeting" was held in Guadalajara on the 1st of October 2014, as joint activity of ALCUE NET and CONECTA2020 projects. The meeting was an opportunity to extend the work that had been developed by the LATPs during the FIRST[1] project and include the additional actors that had been included through the CONECTA 2020 Project. During this meeting eight LATPs[2] were able to present the main activities that had been developed in the platform. Additionally, they were able exchange

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[1] FIRST (Implementing cooperation on Future Internet and ICT Components between Europe and Latin America), a FP7 project, which founded the technology platforms of Argentina, Brazil, Chile, Colombia and Mexico.

[2] Argentina, Brazil, Chile, Colombia, Costa Rica, Peru, Mexico and Uruguay.

their experiences, find common grounds and name an official representative from each technology platform in order to facilitate the exchange of useful information among them.

In the meeting, one of the topics discussed was how to prepare the organizations to have more interaction with the ETPs, which would be the main focus of the second meeting to be held 2015.

• **ALCUE NET ICT Technology Platforms Workshop: Connecting European and Latin American Technology Platforms, Lisbon (Portugal), October 19ᵗʰ, 2015**

Following up to the LATPs meeting occurred on October 1ˢᵗ 2014, this workshop, jointly organized by FCT (Portugal), CONICYT (Chile), VTT (Finland), MINECO (Spain) and CONECTA 2020, aimed at providing an overview on the origins of ETPs and how they can collaborate with the LATPs. Participants were able to share their experiences, best practices, and the results of their initiatives on TPs. The LATPs presented their main fields of work to the ETPs and identified some areas of common interest in order to consider collaboration among platforms from both regions.

One of the facts made evident during the workshop was the difficulty to ensure direct synergies between the ETPs and the LATPs since not all LATPs are organised through thematic fields as in the EU. The presentations from ETPs, such as NEM and NESSI, made relevant the need to look for different mechanisms to promote collaboration between ETPs and LATPs, in order to overcome this difference.

In order to promote and include additional actors to the process of ICT Technology Platforms, a representative from the Caribbean, designated by the Caribbean Science Foundation, participated in the meeting as an observer. ICT has been identified in several processes (such as the Capacity Building and International Network meeting organised in Barbados in May 2015) as a key area in which the Caribbean region could further develop cooperation with the EU. Exploring mechanisms to include a Caribbean Technology Platform to the process is worth taking into consideration.

2.2.3 ENLACE

This section presents results of consultations among Central American and Caribbean countries made during workshops[3] held by ENLACE (Enhancing Scientific Cooperation between the European Union and Central America) project, which aimed at supporting the bi-regional dialogue between the EU and the Central America countries and included a set of activities to enhance the networking among EU and Central America researchers through the organization of S&T dialogues, to identify research priorities of mutual interest and to raise awareness on FP7 in Central America mainly by setting up the network of FP7 National Contact Point in Central America. In May 2012, in Guatemala, ENLACE identified the four ICT thematic areas of mutual interest for joint activities among Central America and Caribbean (CAC) countries and Europe. The four areas were:

- Technology-enhanced learning (e-learning)
- e-infrastructure (sustainable development and disaster management)
- Living Labs and ICT-based innovation models (including smart cities, transport and e-governments)

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[3]ENLACE-D2.5. "Europe, Caribbean & Central America: partners in ICT R&I" Visions, Innovation & Priorities workshop: Setting up the S&T dialogue through a continuous exchange of knowledge and flow of information (proceedings). Date: 15/09/2012. Available at: http://www.enlace-project.eu/results.aspx#C7. Accessed on: 04 November 2015.

- ICT for health

Research networks, such as C@ribnet[4], RedCLARA[5] and GEANT[6], were highly encouraged among the participant experts as merging forces. Building up from existing initiatives such as these, will allow leveraging efforts and avoid overlapping and double efforts.

One major remark underlining ICT initiatives was their lack of continuity and sustainability, especially in areas such as disaster management. To counterbalance this, EU-born innovation methodologies, such as the one of Living Labs, can be helpful as drivers for improving social cohesion within CAC countries. Involving CAC policy makers in research cooperation is critical, as they can push for policies facilitation cooperation: to this end, key actors from the CAC region, such as the Caribbean Community and Common Market (CARICOM), the Caribbean Knowledge and Learning Network (CKLN), and the Central American University Higher Council (CSUCA) must be kept involved in the discussion.

Besides, more realistic engagement is required from the CAC regions. The role of the National Contact Point in the region also needs to be refined and strengthened, as capacity building should take place through their networks.

The below research lines were identified as priority domains for development of ICT in the CAC regions. They have been linked to the 3 priorities identified by the EU-LAC Senior Official Meeting Working Group on ICT.

Research lines Vs. JIRI's WG identified areas

Living Labs			Priorities EU-LAC SOM Working Group on ICT		
Theme	Beneficiary (Caribbean, Central America)	Leading Country (ies)	Capacity Building	EU-LAC ICT Observatory	LAC Network of Technology Platforms
Living Lab Methodologies	Both	European	X	X	X

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[4] C@ribNET (http://www.ckln.org/home/content/cribnet) is a high capacity broadband research and education network implemented by the Caribbean Knowledge and Learning Network (CKLN), officially launched on February 26, 2013. It connects all CARICOM countries and is connected to the world's research and education community, through AMPATH to North America, through Géant to Europe and RedCLARA to Latin America. The network was financed by a contribution by the European Union.

[5] RedCLARA - Latin American Cooperation of Advanced Networks- (http://www.redclara.net/index.php/en/) is a non-profit International Law Organisation, existing since 23 December 2003. It develops and operates the only Latin-American advanced Internet network. Established for regional interconnection and linked to GÉANT2 (pan European advanced network), RedCLARA provides regional interconnection and connection to the world through its international links to GÉANT2 and Internet2 (USA) and, through them, to the advanced networks of the Caribbean (C@ribnet), Africa (UbuntuNet Alliance), Asia (APAN, TEIN), among others. The following countries are participating in RedClara: Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Mexico, Uruguay, Venezuela. The countries in RedCLARA's future connection plans are: Bolivia, Cuba, Honduras, Nicaragua, Panama, Paraguay and Peru.

[6] GÉANT (http://www.geant.net/Network/The_Network/Pages/default.aspx) is the pan-European research and education network that interconnects Europe's National Research and Education Networks (NRENs). Together we connect over 50 million users at 10,000 institutions across Europe, supporting research in areas such as energy, the environment, space and medicine.

		Countries			
Living Labs for social cohesion	Both	Costa Rica	X	X	
Living Lab oriented Software development	Both	Cuba	X		
Living Labs and online trust	Caribbean and Central America	Costa Rica	X		

e-health			**Priorities EU-LAC SOM Working Group on ICT**		
Tele cardiology and Tele gynecology and obstetrics	Caribbean	Dominican Republic	X		X
Cancer personalised treatment through the development of algorithms for the selection of optimal treatments	Central America	Costa Rica	X		
Hemodialysis vascular access patency in end-stage renal disease patients	Central America	Nicaragua	X		
Decision Support Systems in Medicine	Central America	Panama	X		X
e-Learning in Health	Central America	Panama	X		X
Use of ICT tools for the detection of problems and the monitoring of patients having sickle cell disease	Caribbean	French West Indies	X		
Image analysis for the recognition of Caribbean plants	Caribbean	French West Indies	X		X
Epidemiologic vigilance of international health standards and code	Central America	Guatemala	X		X
Strategies to ensure coverage and access to e-health	Central America	Guatemala	X	X	X

Technology enhanced learning			Priorities EU-LAC SOM Working Group on ICT		
M-learning - more feasible than computer supply & energy to power it up	CAC	Haiti	X	X	X
E-learning for quality training for teachers, de-centralized from the excellence center	Central America	Costa Rica	X		
Regional open campuses for research as a solution to support teachers and researchers	Central America	CAC	X	X	X

Re-use and implement others' developments rather than starting own tools	All (CAC + Europe)	All	X		X
e-Learning in Health	Europe	All	X		X

e-infrastrucutre			**Priorities EU-LAC SOM Working Group on ICT**		
The need for cooperation of CAC and EU on development and optimization of detection, warning and mitigation systems is essential	Caribbean and Central America	Guatemala, Haiti		X	
Global concept of emergency shelters distributed across all regions coordinating all proactive and post-disaster actions.	Caribbean and Central America	Haiti		X	
Knowledge transfer in the area of business continuity plans (BCP).	Caribbean	Antilles	X	X	X
Use C@ribnet, RedCLARA and Geant research and education networks as primary vehicles for research activity, which may include: -Use of supercomputers, disaster simulations, etc -Use of networks for data sharing, videoconferencing for disaster recovery matters. Share of EU civil construction norms and regulations with the CAC region.	Caribbean and Central America	Jamaica	X	X	
Share of EU civil construction norms and regulations with the CAC region.	Caribbean and Central America	Guatemala	X		

2.2.4 Caribbean Knowledge and Learning Network (CKLN)

As an Agency of the CARICOM, the Caribbean Knowledge and Learning Network, CKLN, shares the goal of CARICOM - a viable and internationally competitive and sustainable Community.

CKLN's strategic objective is to enhance global competitiveness of the Caribbean by upgrading and diversifying the skills and knowledge of human resources in the region through greater regional collaboration and connectivity.

The project has three main components:

- Institutional strengthening: Building capacity in the Tertiary Education Institutions in the Region, necessary for the successful adoption of new approaches to learning and the sustainable and strategic management of the host institutions;
- Connecting the Caribbean: Harness state-of-the-art communication technologies to provide a virtual learning network between tertiary education institutions in the Caribbean; and
- Enabling regional mechanisms: Facilitate the success of the Tertiary Institutions, particularly as these relate to training, accreditation, quality assurance, standards, financial transactions, learning management and technical support

CKLN also coordinates and manages the development of C@ribNET, the regional Research and Education Network that connects CARICOM institutions for greater collaboration and functional cooperation. The aim of C@ribNET is to bridge the digital divide in the region and achieve social cohesion of Caribbean people through digital inclusion. The Caribbean was, until recently, one of the few regions of the world without a regional research and education network. Through C@ribNET, communities of interest are being organized to implement priority applications such as a regional digital library, a shared student information system for tertiary institutions, together with other applications supporting issues, such as climate change, disaster management, crime and security, tele-health, culture among others.

2.2.5 LEADERSHIP Project

The FP7 LEADERSHIP (Latin America-Europe Advanced Dialogues to Enhance ICT Research and Innovation Partnership) project, which lasted from 10/2013 to 10/2015, supported the EU-LA policy dialogue in the focus areas of the SOM ICT WG, specifically targeting Argentina, Brazil, Chile, Mexico and Colombia. LEADERSHIP has produced six tangible outputs throughout the project lifecycle: Input Papers on Digital Agendas, Funding Mechanisms and ICT Regulations; Report on ICT R&I Priorities in Latin America; Guide on Good Practices on EU-LAC knowledge transfer; and a Guide on Good Practices for Technology and Knowledge Transfer in ICT (based on case studies). These documents were curated and segmented to be distributed among relevant stakeholders, target groups and countries throughout LA and EU.

Main Achievements of LEADERSHIP that collaborated for the advancement of the work of the SOM ICT WG were:

1. Establishment of the LAC-ICT Expert Group as a forum to provide input and recommendations to boost EU-LAC R&I cooperation - The LAC-ICT Expert Group will continue acting as a forum to provide opinions and recommendations to the EU-CELAC SOM ICT WG and Latin American governments in order to enhance EU-LAC R&I cooperation in Horizon 2020 and other programs.

2. Positioning of ICT in the political agendas of EU-CELAC and bilateral dialogues: LEADERSHIP outcomes have reached policy makers and key players in the implementation of S&TI policies, thus contributing to enhance the alignment of R&I cooperation priorities in ICT among Latin American countries as well as with European ones. Facilitation of reciprocity by promoting Latin American funding programs open to Europeans. The Input Paper on Funding Mechanisms provides an updated mapping of main programs and financing funds supporting international cooperation in ICT research and innovation in Argentina, Brazil, Chile, Mexico, Colombia, Costa Rica and Peru. Main Latin American programs and financing funds open to Europeans were reviewed in terms of their eligibility and reciprocity, amounting US$ 6.8 Billion.

3. Setting-up the LAC-Living Labs Network to promote open-innovation and co-creation activities - The LAC-Living Labs Networks has gathered and collaborated with active Living Labs managers and staff as well as with LATPs that would like to continue promoting open innovation and co-creation initiatives in Latin America. The work carried out within the LAC-Living Labs Network has successfully updated the Living Labs landscape in the region and has helped to identify key challenges such as access to funding programmes and achieving citizen engagement in the open-innovation process.

2.2.6 CONECTA 2020

The project Cooperation and Networking between Latin America, the Caribbean and Europe to Coordinate Research Opportunities around ICT and Horizon 2020 challenges via Technology Platforms (CONECTA2020) is implementing TPs in Uruguay, Peru and Costa Rica, besides reinforcing the Brazilian TP BRAFIP. One of the main results of CONECTA 2020 is the definition of a roadmap for R+D+i cooperation between EU and LA in the area of ICT, including cloud computing, based on the Strategic Research and Innovation Agendas (SRIA) developed by each Latin American Technology Platforms (LATPs) during the project lifetime. This roadmap is also regarded as a strategic value and high societal impact for the bilateral cooperation. The LATPs have been developed since the launch of FIRST project during 2010-2011 (Argentina, Brazil, Colombia, Chile and Mexico) and continue with CONECTA 2020 during the period 2014-2016, extending the LATPs to other countries such as Costa Rica, Peru and Uruguay and adding an important tool of cooperation: A matchmaking linkage between both regions via an ontology model creating an eco-system of knowledge and cooperation.

CONECTA 2020 project has also addressed a number of topics dealing with Future Internet, Cloud Computing, Technologies and Applications for a smarter society. It is supported by an EU-LAC dialogue on information society via the creation of specific Thematic Working Groups (TWGs) in each LATPs, such as: Network Electronic Media (NEM), Software and Service (NESSI), Mobile and Wireless (Networld2020), in some areas addressing not only research and innovation matters but also ICT policy and regulatory aspects. Each TWG of the LATPs corresponds to a ETP. For example cooperation on cloud computing (or as on demand computing) allows companies to avoid upfront infrastructure costs, and to focus on projects that differentiate their businesses from the others. The roadmap of cooperation in this aspect covers: standards, certification mechanisms, safe and fair contracts as well as legislative frameworks. CONECTA 2020 Technology Platforms are federating network resources in LA and Europe to build an eco-system of cooperation in Cloud Computing and FIRE (Future Internet) developments.

Joint work on the areas reflected in the SRIAs is expected to be continued in the work program 2016-17 of Horizon 2020. Also the LATPs can be used to implement more effectively public policies such as the EU-LA bilateral cooperation on other research and innovation programs than H2020.

2.2.7 ERANet-LAC Project

General Objective

In order to strengthen the bi-regional partnership in Science, Technology and Innovation, ERANet-LAC will implement two joint calls seeking to coordinate and cluster research programs. Furthermore, the project will mutually open research infrastructures and coordinate and open innovation programs. ERANet-LAC will lay a special focus on the innovation dimension. It will seek to involve European and Latin American innovation agencies in the joint activities as well as in trust-building actions.

The joint activities carried out will be evaluated and function as a basis for a roadmap to be incorporated in a so-called EU-CELAC Platform for Funding Agencies. This funding platform will serve as information and communication platform and offer substantial guidelines as well as online working space to facilitate the development of future concrete bi-regional joint initiatives.

The main activities of ERANet-LAC

- Promotion of mutual opening and coordination of existing programs, infrastructures and cooperation.
- Implementation of 2 Joint Calls: The first one will be launched approximately in the end of 2014 and the second one in the end of 2015.
- Coordination of a consultation process to inform funding agencies and research institutions from both regions about the joint actions.
- Building a platform for EU and CELAC funding agencies.

SOM process and topics definition

During the SOM meeting celebrated in Costa Rica in 2014, the ICT Working group presented the topics selected through the ALCUENET Project, that were the outcome of the mapping and socialization process carried out by the working group and with the support of the ALCUENET Project during the meeting that took place in Santiago. The two topics presented were the following:

- Improving wellbeing through inclusive e-Health;
- Smarter, inclusive and sustainable cities.

During the SOM, both topics were considered relevant topics to create synergies between the LAC and EU regions and were validated to be presented as suggestions for funding through the ERANET LAC call programmed for the end of 2014.

First call

The two topics selected were presented at the ERANET LAC Funding Agencies Meeting, which took place in Canarias in June 2014. Although both topics were supported during the SOM, none of them achieved enough economic backing in order to be included as a topic in the 2014 ERANET LAC Call. The general situation observed during the meeting was that several LAC countries did have the interest and economic conditions to include ICT topics among the areas to support, but on the European side, only two countries confirmed their support and there was a possibility of achieving a third.

In consideration that the ERANET LAC Call scheme requires a minimum of two countries from each region to be present in each consortium applying for funding, both the ERANET LAC Project Coordinators, as also the ICT Working Group, concluded that it would not be viable to include the topics under these circumstances.

Considering the above, the ICT Working group concluded that the same two topics presented to the previous ERANET LAC Funding Agencies Meeting would be presented to the 2015.

Second call

For the 2015 edition of the ERANET LAC Call, the meeting took place in Buenos Aires in September 2015. The ICT Working Group presented the same two topics; the main reason was that the validation process carried

out by the ALCUENET project, in which both topics were identified, was considered still a reflection of the current ICT relation between both regions.

During the 2015 meeting, enough support was achieved in order to confirm that both topics will be available for the 2015 Call. Additionally, both topics have the advantage of being transversal to other areas of research than ICT. The first topic, regarding e-Health, was very much supported by the health group and agencies related directly to health. The second topic, related to smart cities, includes areas related to energy, transport, etc.

The call opens officially on December 1st and an important number of applications is expected.

2.2.8 FIWARE – Strengthening Mexico – EU Cooperation on ICT

FIWARE, the public-private partnership on Future Internet (FI) initiated by the European Commission in 2011, has opened its first international operation abroad, in Mexico in 2014. The nature of this initiative involves private companies, knowledge and research organizations and individuals developing FI solutions around components of the FIWARE platform. The Mexican FIWARE Lab Node (the First FIWARE lab node in Latin America) is a great example of the EU-Mexico cooperation on ICT.

FIWARE is an innovative, open cloud-based infrastructure for cost-effective creation and delivery of Future Internet applications and services, at a scale not seen before. It seeks to provide a truly open, public and royalty-free architecture and a set of open specifications that will allow developers, service providers, enterprises and other organizations to develop products that satisfy their needs while still being open and innovative.

The launch of FIWARE in Mexico is the result of cooperation between Information and Technology Research & Development Center (INFOTEC) and Monterrey Institute of Technology and Higher Education (ITESM) on the Mexican side and the FIWARE programme on European side. It follows a long tradition of collaborative research and technology development between Mexico and the EU, supported by Mexico's National Council for Science and Technology (CONACYT) and the European Commission.

The process will include a plan to adopt open standards, thus easing the development of Smart Cities; the launch of a laboratory (linked to a sensor network) to do research on the Internet of the Future and an acceleration program to promote the development of startups using FIWARE. Furthermore, Mexico also opens the second and most important FIWARE Lab node, which will encourage entrepreneurs to experiment with FIWARE technologies.

Networking sessions and thematic exhibitions on FIWARE were held during the [ICT 2015 Innovate, Connect, Transform](#) to introduce the possibilities that the Mexican FIWARE Lab Node has to offer. These activities gathered industry, governments and academia representatives to give them the opportunity to take advantage of partnering with Mexican entities in H2020 project proposals, adding value to the scope of the projects both at the technical and financial level.

2.2.9 ELAN Network Project

The ELAN Programme (European and Latin American Business Services and Innovation) is a EU initiative that seeks to increase and diversify the EU economic presence in Latin America, by meeting the Latin American

demand for knowledge and innovative technology. ELAN also aims to boost the opportunities that both markets offer for European and Latin American SMEs, through two interdependent strategies:

- European and Latin American Business Services (ELAN Biz), whose main objective is to provide up-to-date and comprehensive information services to European SMEs interested in doing business in strategic Latin American countries.
- European and Latin American Technology Based Business Network (ELAN Network), whose main purpose is to generate technology-based business opportunities between European and Latin American SMEs.

The ELAN Network is a space for collaboration, co-generation and development of technology-based business opportunities between Europe and Latin America. It brings together key European and Latin American research and innovation actors, who promote technology based transformation processes and economic growth, in order to:

- Promote the generation of technology based business opportunities between European and Latin American SMEs, enhancing R&D results with a business model that responds to market demands;
- Promote the exchange of knowledge, technology transfer and co-creation processes to foster the competitiveness of SMEs and an equitable and sustainable socio-economic development; and
- Accompany innovative SMEs in their efforts to transfer technology to new geographical markets.

ELAN Network organizes networking events to generate Technology-Based Business Opportunities in the European Union and in LA, focusing especially on Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico and Peru).
The focus of ELAN Network project is on those sectors of manifested interested for joint collaboration between EU and LAC, being: renewable energies, ICT, new materials, health, biotechnology and bioeconomy, environmental technologies, nanotechnologies.

The ELAN network has initiated in 2015 and will last until the end of 2017. The relevance of the Network is that it aims at becoming a self-sustainable network of relevant actors in each one of the focus sectors, enhance bi-regional technology transfer and increase technology-based business, thus enhancing innovation as well, between the regions.

3   Cooperation Actions and instruments: Road Map for implementation

- *Inform about progress of activities*
- *Define next Activity Plan 2016-2017, including concrete actions and resources to be committed*

Activity	Concrete Actions	Work progress	Instruments & resources	Indicators + Impact	Timeline
H2020 Dissemination	- Disseminate H2020 ICT WP as well ICT-related calls among LAC countries - Disclosure and disseminate means how LAC countries can participate in H2020 - Disseminate among EU organizations the advantages of collaborating with LAC	Initial	- EC website and EC LAC delegations; - ALCUE NET NPC networks; - ALCUE NET website; - LAC ICT Expert Group; and - LEADERSHIP and CONECTA2020 websites.		2015-2016
ICT Group Membership	- Email consultations with countries prior to the SOM based on the present report. - Call for membership in plenary session.	Ongoing	Emails	- Confirmation of participation for new members	2015
Update ICT priorities	- Make email consultation with CAC countries to update their priorities regarding ICT themes. - Disseminate funding opportunities targeting the region. - Strengthen dissemination of ICT-related activities to CAC region.	Initial	- Emails - More personal contact with representatives of the countries	- More participation of CAC in ICT events addressing LAC - More participation in projects.	2015-2017
Update ICT projects	- Update findings of mapping of bi-regional ICT projects	Ongoing	Emails EC project database	- Mapping of all bi-regional relevant ICT projects, programs, funding	Throughout 2016

					and initiatives.	
Update mapping of EU-LAC ICT research projects	- Measure the participation of Latin American countries in ICT-related H2020 calls (2014-2015 and 2016-2017 Work Programmes)	Ongoing	H2020 Latin American queries	- Number of proposals including LAC partners	3rd period of the ALCUE NET project
Activities focused on cooperation with Caribbean countries	- Define mechanisms to include the Caribbean ICT sector into ICT LATPs. - Foster participation from Caribbean countries in joint matchmaking events and info days	Initial	Existing ICT LATPs. Increase participation through the ALCUE NET project.		3rd period of the ALCUE NET project
Promote H2020 among LAC countries	- Matchmaking event open to LAC and EU ICT research community.	Ongoing	Assigned ALCUE NET budget	- Increased number of Latin American partners in H2020 proposals	3rd period of the ALCUE NET project
Set-up Network of Smart cities	- Map initiatives of smart cities in the EU and LAC countries in order to promote opportunities among them.	Initial	Emails	- Mapping of ongoing initiatives.	2016

4   Summary of EU-CELAC SOM decisions-making issues

• *To forward recommendations for SOM deliberations: i) Ideas to enhance biregional cooperation on R&I and future sustainability beyond lifetime of ongoing supporting projects and initiatives; ii) Reflections towards HORIZON 2020, focused on calls, participant rules & new instruments and opportunities.*

- Recommendation 1: To utilize H2020 calls to foster EU-CELAC SOM ICT WG proposed focus themes. Although there are no calls directed to Latin America in H2020, which might obstruct the development of ICT projects of interest to the whole region, there are possibilities still for participation in H2020 calls in specific topics. A part from the cases of Brazil and Mexico, which are going to issue specific joint calls and whose researchers are not automatically funded by EU, organizations involved in this WG shall disseminate information and motivate their citizens to participate in calls related that address the focus areas of this WG. Participation of LAC organizations can be both as experts and as implementers of pilot solutions. A good guide to orient the participation is the draft "A guide to ICT related activities in WP2016-17[7]", which shows all the areas in which ICT is/might be involved.

- Recommendation 2: Renew call for members of ICT WG. A consultation with countries from both regions will be carried out in order to ensure commitment with the activities of the WG. During the SOM2015, a new invitation will be made during the plenary session for manifestation of interest.

- Recommendation 3: Involve CAC countries with ICT WG and harmonize their priorities with the findings for the rest of LAC. With few exceptions, participation of Central America and Caribbean experts in the activities of the WG has not been enough. This claims for their stronger involvement in events and projects that aim at covering the whole LAC region. In order to reach this aim we should build stronger cooperation with the EC as well for the definition of programs and projects supporting the CAC. In the cases of the themes suggested for ERANet LAC funding CAC was well represented. We should aim at having always same significant participation.

- Recommendation 4: Update findings of mapping of bi-regional ICT projects. Following the results of the mapping presented in March 2014 for the bi-regional projects and programs, a follow up study should be conducted in order to finalize the mapping for the ICT FP7 projects and finding out whether new projects have been funded under the bi-lateral schemes mapped.

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[7] Available at: https://ec.europa.eu/digital-agenda/en/information-communication-technologies-horizon-2020

5   Acronyms

ALCUE NET	Latin America, Caribbean and European Union Network on Research and Innovation
CAC	Central America and the Caribbean
CARICOM	Caribbean Community
CELAC	Community of Latin American and Caribbean States
CKLN	Caribbean Knowledge and Learning Network
CONECTA2020	Cooperation and Networking between Latin America, the Caribbean and Europe to Coordinate Research Opportunities around ICT and Horizon 2020 challenges via Technology Platforms
CONICYT	National Commission for Scientific and Technological Research (Chile)
ENLACE	Enhancing Scientific Cooperation between the European Union and Central America
ELAN Programme	European and Latin American Business Services and Innovation
ENoLL	European Network of Living Labs
ERANET LAC	Network of the European Union, Latin America and the Caribbean Countries on Joint Innovation and Research Activities
ETPs	European ICT Technology Platforms
EU	European Union
EULAC	European Union, Latin America and the Caribbean
FCT	Fundação para a Ciência e a Tecnologia (Portugal)
FP7	Seventh Framework Programme
H2020	Horizon 2020 (current Framework Programme)
ICT	Information and Communications Technology
INFOTEC	Information and Technology Research & Development Center
ITESM	Monterrey Institute of Technology and Higher Education
JIRI	Joint Initiative for Research and Innovation
LA	Latin America
LATPs	Latin American ICT Technology Platforms
LAC	Latin America and the Caribbean
LEADERSHIP	Latin America – Europe ICT Research & Innovation Partnership
MINCYT	Ministerio de Ciencia, Tecnología e Innovación Productiva (Argentina)
MINECO	Ministerio de Economía y Competitividad (Spain)
SOM	Senior Officials Meetings
STI	Science Technology and Innovation
TPs	ICT Technology Platforms
VTT	Technical Research Centre of Finland
WG	Working Group