EIT ICT Labs
Call of Activities 2013

Version 1.1

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1 Introduction

This document contains the call text for the Call of Activities 2013. It complements the other parts of the call information package by explaining the solicited content per action line. Please refer to the document *EIT ICT Labs Instructions for the Call of Activities 2013* for information on the call process and the evaluation criteria.

The activity proposals must be formulated using the *Activity Plan 2013* Excel template available on EIT ICT Labs intranet at http://eit.ictlabs.eu/. The filled templates are submitted by the activity leads using the EasyChair system at https://www.easychair.org/conferences/?conf=eitictlabs2013. A 2-page attachment giving further detail on the innovation goal and plan synopsis can be added to the submission. The attachment is mandatory in some action lines; please follow the instructions given in the respective sections below. Certain parts of the template will be included verbatim in the Business Plan submitted to EIT.

The call will open on May 1, 2012. The deadline for submitting activity proposals is May 31, 2012. The results will be announced by end of June 2012. Revised versions of accepted proposals are expected by e-mail to CSO Martti Mäntylä, mam@ictlabs.eu, by August 10, 2012.

1.1 Strategic Setting

As defined in the Strategic Innovation Agenda 2012, the top-level goal of EIT ICT Labs is to *become a leading force in ICT innovation in Europe* through integrating and reorganizing the knowledge triangle of education, research, and business. At the core of EIT ICT Labs' strategy is the concept of *thought leadership in ICT innovation*, created and reinforced by the *innovation cycle:*

- *Set the agenda:* Build and maintain the competence for defining compelling and engaging visions of the future and getting them recognized by the key stakeholders.
- *Mobilize actors and resources:* Build and maintain the competence of recruiting other excellent actors and their resources – brains, technologies, and money – to pursue the goals of the agenda.
- *Execute:* Build and maintain world-class competence in executing the full scale of activities needed.
- *Deliver:* Build and maintain world-class competence in bringing the results to the market and facilitating their commercial success and impact.

The strategy rests upon the Unique Selling Points of the KIC:

- *Knowledge triangle integration:* EIT ICT Labs has the mandate to engage in all realms of the knowledge triangle – education, research, and business – and to work across them for added value. It is the sole European institution with this mandate.
- *Complementarity, added value, and leverage:* The EIT grant is exclusively aimed at complementary actions executed on top of existing programs and

instruments for added value and high leverage. With this, EIT ICT Labs has the mandate to innovate its ways of work.

- *Co-location centres and nodes:* The national nodes and co-location centres provide EIT ICT Labs the muscles for executing its agenda at European and national levels. They also are the focus points for mobility, interaction, and open innovation, aiming to become world-class innovation hotspots in their chosen foci.
- *Long-term vision:* EIT ICT Labs has been established with a 15-year vision. This longevity makes it possible to define and execute long-term strategies based on knowledge and trust accumulation, leading to a growing presence in the European innovation ecosystem.

See the Strategic Innovation Agenda 2012 of EIT ICT Labs, available on the intranet, for more detail.

1.2 KIC-level Priorities

The strategic framework forms the backdrop of the KIC-level priorities for the call:

- *Live the ERB triangle*: The integration of education, research, and business is a key unique characteristic of EIT ICT Labs. In the call, a special emphasis will be placed on increasing the presence and interaction of all three realms in action lines. See section 1.2.1 below for a specific initiative intended to boost especially the embedding of business in action lines.
- *Put the carrier first*: EIT ICT Labs' implements the principles of complementarity and added value primarily through the *catalyst-carrier model*. To gain maximal value from the model, selection of carriers with high innovation potential is a key prerequisite and should be the first step in preparing an activity proposal.
- *Focus on impact:* The choice of catalysts to be applied on the carriers should be driven by the specific impact goals of the activity in alignment with the performance goals of the action lines and the entire KIC. Please refer to the Catalyst Tutorial 2013 for information on the specific innovation goals of various catalysts. See section 1.2.2 for details of the specific performance goals at the KIC level.
- *Boost industry participation:* The strength of the EIT ICT Labs partnership is another unique characteristic of the KIC. The mobilisation of the full capability of the partnership is another key goal where considerable progress is expected. Growing participation of innovative SME companies is also desired.

The evaluation of activity proposals will emphasize these priorities amongst the other criteria explained in the *EIT ICT Labs Instructions for the Call of Activities 2013.*

1.2.1 Live the ERB Triangle: Business Incubation Initiative

In 2013, the business catalysts will be reorganized to a set of focused services provided by the *Business Development Program (BDP)* teams operating at each node. To boost the integration of these services to action lines, a special *Business Incubation Initiative* is included in the call.

By the initiative, a special budget is allocated for use by action lines. The budget will be allocated competitively to *business incubation activities* in action lines that combine business catalysts provided by the BDP with education / research catalysts to realize a start-up creation activity, a SME growth activity, or a large industry renewal activity. See the suggested templates of these activity types in Figure 1. The choice of the template should be based on the specific business objectives of the action line. Also other patterns may be proposed if justified by the specific profile of the action line. At proposal stage, it is also possible to leave the business catalyst part unspecified, to be detailed by the BDP team on the basis the specific needs of the action line and the available business incubation opportunities.

Figure 1. Suggested templates for Business Incubation Activities

The special budget is allocated on the basis of *matching funding*: the EIT funding invested by an action line to run E/R catalysts over the selected carriers will be augmented by an investment from the special budget. This funding is targeted to the BDP team to run selected business catalysts over the carriers. A typical funding allocation per business incubation activity is expected to be 200 k€.

See Figure 2 for illustration on the matching funding principle.

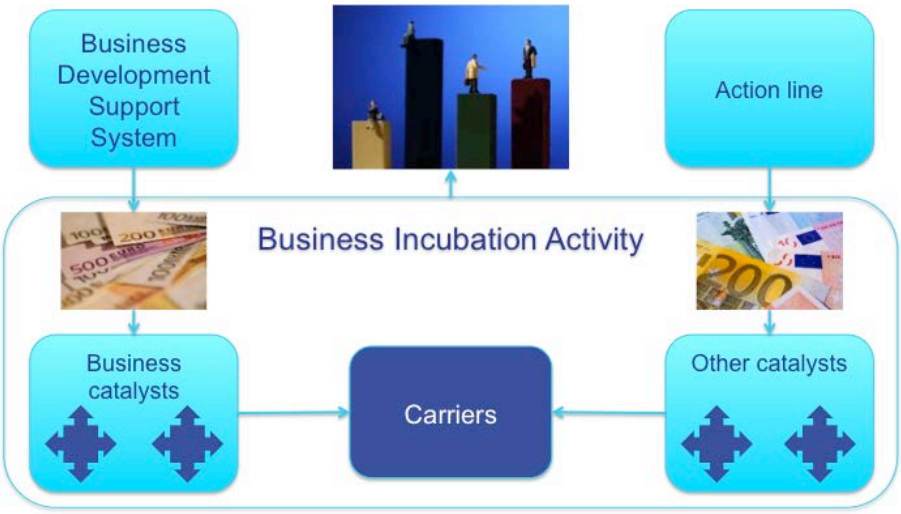


Figure 2. The make-up and funding of a Business Incubation Activity

Accepted business incubation activities belong to their action lines just like any other activity. In particular, they report to the action line leader, and their results are counted towards the performance objectives of the action line.

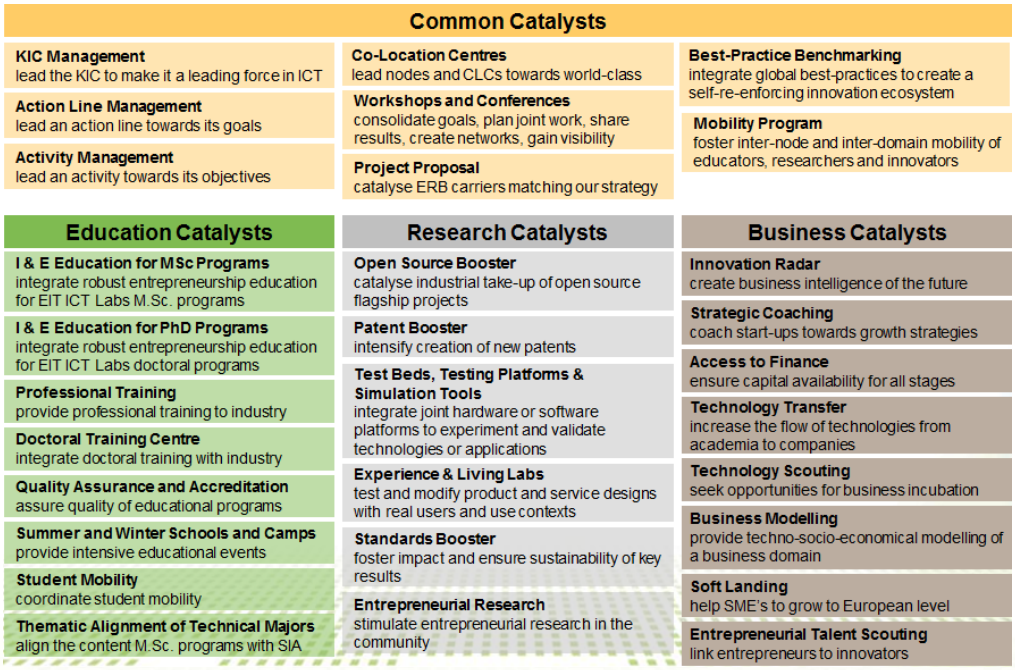
As a new instrument, from 2013 onwards it will be possible to give subgrants of up to 50.000 € to individuals, start-ups, or SME's for innovation or RTD oriented value-adding work. This facility can be combined with business incubation activities to support business maturation of the recipients.

Please note that the conditions of giving subgrants are regulated in Article 9 of the Grant Agreement. In particular, the different types of activities covered by subgrants, the categories of possible subgrant beneficiaries, and the criteria to award subgrants must be specified in the activity plan.

1.2.2 Focus on Impact

The impact of EIT ICT Labs is measured by EIT on the basis of a number of Key Performance Indicators. To support the process around key performance indicators in EIT ICT Labs we define Performance Indicators (PIs) for internal use. Internal PIs are used for quality management and are a measure for the effectiveness of our Catalysts. As a result the PIs are derived from our Catalysts and can thus be classified as research PIs derived from Research Catalysts, Education PIs derived from Education Catalysts, and Business PIs derived from Business Catalyst and Common PIs derived from the Common Catalysts. Since the call is about activities for the action lines, ***we concentrate in this call text on those PIs that are directly relevant for the action lines and activities***. Activities have to indicate what they will contribute to which PIs.

Below you find the 2013 set of Education, Research, Business and Common Catalysts followed by the respective sets of Performance Indicators derived.



Education Performance Indicators	
# MSc / PhD students following I&E education modules	**420** ($120_{2012} + 300_{2013}$) / **140** ($40_{2012} + 100_{2013}$)
# Doctoral Training Centres	**10** ($4_{2012} + 6_{2013}$)
# Professional Training Courses developed and offered	**3**
# Summer/Winter Schools/Camps	**14** (i.e. average 1 per action line)
# Inter KIC student visits outside MSc / PhD programs	**72** (i.e. average 1 student / month / node)
# Industrial partners involved in MSc and PhD programs	**18** (i.e. average 3 per node)
# MSc and PhD students active in other action lines	**50**

Research Performance Indicators	
# Open source initiatives taken up by industry	**6** (i.e. by half of the action lines)
# Patent applications	**12** (i.e. average 1 per action line)
# Experiments on EIT ICT Labs enabled Pan-European Test beds	**10**
# User tests in EIT ICT Labs enabled living/experience labs	**10**
# Accepted standardisation contributions	**6** (i.e. half of the action lines)
# Industrial prototypes ready for transfer	**6** (i.e. half of the action lines)
# Top publications	**25**

Business Performance Indicators	
# newly created start-ups coached by EIT ICT Labs	**15** (8 directly resulting from action line activities)
# financial transactions concluded to support EIT ICT Labs start-ups or SMEs	**10**
# confirmed technology transfers to/from EIT ICT Labs partners	**20**
# business models delivered to EIT ICT Labs partners	**10**
# new non-national customers for EIT ICT Labs SMEs	**18** (i.e. average 3 per node)

Common Performance Indicators	
# events / long duration projects in the CLCs	**30 / 6**
# external people in EIT ICT Labs (co-)organised workshop / conferences at CLCs	**1200**
# people involved in cross-node visits to CLCs	**600** (i.e. average 100 per node)

In addition to the KIC-level Performance Indicators, action lines may choose additional domain or process oriented action line level Performance Indicators; if so, they are indicated in the text.

All activity proposals should specify activity-level Performance Indicators contributing to the KIC or action line level PI's. To facilitate expressing the performance goals of a proposed activity, the activity plan template includes a menu of performance indicators for proposers to pick and choose. Exceptionally, activities can also define their own measures, if the predefined ones do not capture its key goals.

To set and achieve the performance objectives, diligent choice and use of the catalysts to be applied is a key. Each catalyst suggests typical performance indicators; please consult the Catalyst Tutorial.

1.3 Quality Control

Experience from performance reporting 2010 and 2011 indicates that quality control of EIT ICT Labs operations must be another priority for the work of 2013.

Good quality starts with the activity planning. Partners are advised to pay close attention to the intended scope of the work and the aimed added value of the catalysts, as described in the Catalyst Tutorial. If the work reported under a specific catalyst does not match the catalyst scope, EIT may consider the related costs ineligible, and in any case the intended added value cannot be created. Naturally, also the content and scope of the deliverables should reflect the nature of the work, and document adequately its flow and results.

Quick checklist for proposals:

- ✓ *Strong carrier project present*
- ✓ *Clear activity objective that contributes to the overall EIT ICT Labs goals and performance indicators (PI's)*
- ✓ *Vigorous set of catalysts selected*
- ✓ *Good focus with major tasks and a selected number of key partners, avoid compartmentalization*

1.4 Further Notes

The subsequent sections give further information on the priorities of the action lines, including information on the existing activities, many of which are expected to continue in 2013, and the kinds of new activities solicited. Activities focusing on a single priority are preferred. Partners interested on joining the existing activities should contact their leaders shown.

In 2012, EIT ICT Labs runs 90 activities with 1,100 catalyst tasks, producing a total of 1,022 deliverables (of which 358 are quarterly progress reports).

In 2013, most action lines endeavour to avoid excessive fragmentation of their activities by limiting the number of activities to be included and avoiding very large activity consortia and small activity budgets (e.g., less than 40 k€ per partner and activity). We also endeavour to reduce the number of activity deliverables to 2-5 per activity.

In 2012, a few activities have declined to launch their work before the final Grant Agreement and Partner Grant Agreements are available. This is not acceptable. All partners will receive the final Annex 1 of their PGA in early January of the year, giving the final detail of their funding. This must be considered a sufficient basis for launching the work at the start of the year, despite the formal processes of signing the agreements will take 2-3 months.

2 Action Lines

2.1 Computing in the Cloud

Key Phrase: Provision of applications, massive data and infrastructures as services ubiquitously accessible from any device connected to the Internet

Action Line Lead: Seif Haridi, KTH & SICS, seif@sics.se

MC Owner: Valérie Issarny, EIT ICT Labs Paris, valerie.issarny@ictlabs.eu

2.1.1 Scope of the action line

Cloud Computing will be at the heart of the future Internet, implementing the vision of computing and information processing as a utility. Clouds are currently hosted in data centres and provide an elastic set of resources that are used by software deployed and accessed as a service. Clouds will also extend to exploit resources of devices at the edge of the network. Cloud computing has many advantages: economy of scale, frugality in energy consumption, elasticity, the lack of any entry threshold, and the possibility to pay only for actual usage or “pay as you go”.

An important trend where cloud technologies play a vital role is the continuing increase in data volumes in various societal sectors. We can foresee a situation where data intensive clouds handle distributed real-time data collected via different sources. The emerging Internet of Things will also dramatically change requirements on cloud infrastructures and systems as just-in-time analysis of real-time data becomes common. Decisions within companies and public authorities will become increasingly dependent on awareness through these large amounts of data.

This increase, which is often exponential in nature, puts pressure not only on storage, computational power, and communication infrastructures, but also on algorithmic development and computational frameworks for analysis and retrieval.

Cloud technologies with increasing ability to access, analyse and transform large data volumes can be put to good use in many application areas including e-Science, e-Health, e-Government, Process industry and automation, Operation and Maintenance, Media content & entertainment, and Sustainable society. As information-intensive cloud technologies mature, they are expected to lead to a dramatic increase in innovation in the above mentioned application domains.

Performance indicators: # concrete demonstrators arising from systems research; # useable tools, open source, or testbed components arising; # take-up of the demonstrators to application specific action-lines

2.1.2 Running activities in 2012

Row Labels		EIT Funding	Non-EIT Fund.
RCLD 11 882 Cloud Computing for Real-time (Dr. Thomas Schierl, thomas.schierl@hhi.fraunhofer.de)	€	260 000	931 000
RCLD 12 105 Cloud computing summer school (Jukka K. Nurminen, jukka.k.nurminen@aalto.fi)	€	20 000	0
RCLD 12 115 EUROPA – EITs cloud-based data (Volker Markl, volker.markl@tu-berlin.de)	€	460 000	2 102 500
RCLD 12 196 Resource Management Across Clo (Dick H.J. Epema, d.h.j.epema@tudelft.nl)	€	315 000	1 704 000
RCLD 12 206 Towards a Mobile Cloud (Wolfgang Theilmann, wolfgang.theilmann@sap.com)	€	205 000	1 230 000
Grand Total	€	1 260 000	5 967 500

2.1.3 Priorities in 2013

In this call we look for *innovations beyond the state-of-art* in the following areas:

Data intensive computing infrastructure: organize around one computational framework to support:

- Beyond Hadoop/ MapReduce
- Distributed indexing
- Management of jobs with different resource and time-line requirements
- Elastic storage/data
- Complex data processing
- Higher level programming systems

Cloud management: organize around one management platform to support

- Multiple data centres
- Predictable resource management
- Integration of resource and SLA management
- Management of multiple application classes
- Energy-aware management
- Application description models

Non data-centre clouds and hybrid clouds: address systems for resource provisioning that are not exclusively based on large data centres

- Combined peer-to-peer and data-centre clouds
- Combined mobile devices and data-centre clouds
- Distributed micro-clouds, and community clouds

Platform as a Service (PAAS): design of systems at PAAS level for supporting domains with specific requirements beyond normal 3-tier enterprise applications including mobile services platforms, data-bases as platforms, media platforms, etc.

Trusted cloud platforms: design of systems addressing trust issues beyond current state-of-art. These may include:

- Long lasting applications
- Collaboration and federations among cloud providers, including community clouds
- Business models of collaboration among cloud providers

2.1.4 Activities solicited in 2013

The action line is focused on innovations based on system research with concrete demonstrators, standards, and open source tools *beyond the current state of art* as deliverables. A road map should be specified for moving the demonstrators into useable tools with user community, open source, or testbed components. Relevance of the demonstrators to the application specific domains should be clarified. Activities seeking extension from 2012 to 2013 should make clear what they expect to accomplish in 2012 and 2013, and what is the new added value of the 2013 extension. Activities are encouraged to integrate, with the system research, aspects related to business, and education as defined by the specific catalysts.

2.2 Cyber Physical Systems

Key Phrase: Foster the development of Cyber-Physical Systems and their integration in major application domains of EIT ICT Labs

Action Line Lead: Holger Pfeifer, TU München, pfeifer@in.tum.de

MC Owner: Marko Turpeinen, EIT ICT Labs Helsinki, marko.turpeinen@ictlabs.eu

2.2.1 Scope of the action line

The term Cyber-Physical Systems (CPS) refers to systems whose core functionality intrinsically relies on a tight coupling of physical and computational processes. Cyber-physical systems address two major fields of innovation:

- The interaction of the physical world by actuators and sensors with the digital world in software intensive embedded systems
- The integration of data from the physical world (real world awareness) with global networks (cyber space) and their data, knowledge and services.

CPS extend networked embedded systems, moving from closed, self-contained units to open, highly networked socio-technical systems of systems. Indeed, cyber-physical systems have the potential of becoming a disruptive technology by opening completely new areas of innovation and novel business platforms, but at the same time CPS pose huge challenges to science and research to master the complexity of their development.

The action line aims at fostering innovation in cyber-physical systems through concerted activities that pursue the following central goals:

- to generate exploitable research results integrating methods and techniques from different engineering disciplines including mechanical and electrical engineering, control theory, as well as computer science, in order to support transforming the governance of the complete life-cycle of cyber-physical systems into a science-based engineering discipline covering specification, design, development, certification, operation, maintenance, and evolution;
- to support the development of open and standardized architectures, ICT infrastructures, and pan-European platforms for innovation and business incubation in CPS;
- to align research efforts by attracting funding for joint R&D initiatives, and by proposing a coordinated research agenda for government, academia, and industry that is organized around the fundamental challenges posed by cyber-physical systems;
- to create and implement added-value European curricula and life-long education programmes to proliferate knowledge of cyber-physical systems in academia and industry.

Applications of cyber-physical systems can be foreseen in several domains, including energy, transportation, health, smart spaces, and production. It is therefore the goal of the CPS action line to develop competencies that both contribute to

related action lines and establish new application areas for EIT ICT Labs, such as future manufacturing.

Performance indicators: # carrier projects in AL, proportional distribution of partners (academia, research institutes, large industry, SME), # top publications, # pan-European test-beds, # pan-European experience & living labs, # application cases analysed, # new product and service demonstrations / pilots

2.2.2 Running activities in 2012

Row Labels	EIT Funding	Non-EIT Fund.
RCPS 12 121 Cyber-Physical Systems Enginee (Holger Pfeifer, pfeifer@in.tum.de)	€ 60 000	191 640
RCPS 12 149 From WSN Testbeds to CPS Testb (Thiemo Voigt, thiemo@sics.se)	€ 180 000	586 000
Grand Total	**€ 240 000**	**777 640**

In 2012 the action line runs in “incubation mode” with a limited number of activities.

2.2.3 Priorities in 2013

CPS systems engineering:

- Models of CPSs, requirements engineering
- Software architectures, engineering environments, model-based development
- Compositionality, reconfiguration, flexible evolution
- User involvement: participatory analysis and design

CPS enabling technologies:

- Sensing technology, real-time control
- Dependability, safety and security, assurance
- Context-awareness, adaptivity, self-organization
- Human-machine interaction, cooperation

CPS architectures and applications:

- Communication infrastructures, cloud
- Reference architecture, interoperability
- Middleware, modular service architectures
- CPS platforms

CPS Knowledge Community:

- To form a common understanding of and exchange knowledge about CPS challenges, needs and trends.

2.2.4 Activities solicited in 2013

The action line solicits activities that explore solutions to the challenges in the priority fields that show a clear view towards the development of innovative next-generation CPS applications. Development of demonstrators, creation and sharing of pan-European test-beds, experimentation and empirical evaluation and validation in experience and living labs is encouraged. Activities that achieve synergies by linking up to domains in related action lines, as well as ones that open up new application areas for EIT ICT Labs, such as future manufacturing, are welcome.

2.3 Digital Cities of the Future

Key Phrase: Enabling the city space to become more democratic towards a citizen centric model

Action Line Leader: Khaldoun Al Agha, UMPC, Khaldoun.AlAgha@ictlabs.eu

MC Owner: Valérie Issarny, EIT ICT Labs Paris, valerie.issarny@ictlabs.eu

2.3.1 Scope of the action line

The focus of the action line is on Citizen-Centric Cities (CCC), a paradigm allowing governments and municipalities to enhance the participation of the citizens in the information, decision, and implementation processes for a better life in the city.

CCC aims to increase the awareness of the Citizens of their individual and collective capabilities, both in the decision making process and in the implementation of these decisions. The ultimate goal is to realize a migration from the customer-centric to the user-centric model.

Citizen participation in the digital cities can take different forms among which: Collecting and disseminating the information of interest by and for the citizen; Analysing and sensing the dynamic status of the city; Participating in the decision-making and thereby the evolution of the city environment; Improving the city performance and sustainability.

The notion of open data and open networks is the heart of the CCC paradigm. From one side, public administrations, companies, operators and Internet providers data in a raw form. Then, from the other side, ICT actors will develop models, tools and applications facilitating the use of those data in order to optimize the urban environment. Further, it is critical to elaborate a business model to address how to engage developers for producing intelligent applications and the citizens to use those applications.

The expected results of CCC are applications in sync with the interests of the cities and their citizens leading to benefit such as improved citizen safety, transportation time, tourism experience, education system, etc.

Performance indicators: # cities included in the service pilots; # patents ; # common publications between European partners; # pan-European testbeds

2.3.2 Running activities in 2012

Row Labels	EIT Funding	Non-EIT Fund.
TDCT 11 803 DataBridges - data integration (Ioana Manolescu (INRIA), ioana.manolescu@inria.fr)	€ 260 000	899 500
TDCT 12 117 HCI technologies for the digit (Inessa Seifert, inessa.seifert@dfki.de)	€ 210 000	1 275 000
TDCT 12 185 TDCT Innovation Radar 2012 (Kåre Synnes, unicorn@ltu.se)	€ 120 000	600 000
Grand Total	**€ 590 000**	**2 774 500**

2.3.3 Priorities in 2013

Priorities toward realizing CCC are the following for the 2013 Call:

- Managing big data generated for and by digital cities.
- Creating a crowd-sourcing platform enabling citizens to contribute and benefit from the data and services of the digital cities.

- Creating applications and supporting infrastructure to enhance the citizen safety and security, and to guarantee the information privacy.
- Creating services and supporting infrastructures for large public spaces (e.g., stadium, festival, big library).
- Creating customized and new intelligent services for citizens.
- Establishing a living lab to experiment new services for citizens.
- Elaborating Business models for engaging citizens and ICT companies in the CCC.

2.3.4 Activities solicited in 2013

The action line welcomes proposal addressing any of the above priorities in isolation or in conjunction. The action line will pay particular attention to proposals involving SMEs and large companies, and integrating the ERB dimensions of the KIC. In addition, collaboration with other action lines as well as actions linked with the two other KICs are encouraged.

2.4 Doctoral School

Key Phrase: Grow the EIT ICT Labs Doctoral Program on ICT Innovation

Action Line Leader: Christian Queinnec, LIP6/UMPC, Christian.Queinnec@lip6.fr

MC Owner: Gunnar Landgren, EIT ICT Labs Stockholm, gunnar.landgren@ictlabs.eu

2.4.1 Scope of the action line

The overarching goal of this action line is to let doctoral students develop an innovation and entrepreneurial (I&E) mind-set. Achieving this goal must neither perturb the scientific quality of the PhD degree, nor hurt the required quality of the relationship between the adviser and the doctoral student but, at the same time, it must fit some industrial needs (cf. Salzburg principles).

An I&E education has been defined for volunteering doctoral students complemented by a business development experience where they are immersed within a real business-oriented industrial context. The EIT ICT Labs certificate will be attributed to the doctoral students who pass successfully this I&E education and their defence. The target for Fall 2013 is to enrol 100 new doctoral students in the "EIT ICT Labs Doctoral Program on ICT Innovation".

The "Doctoral Training Centre" (DTC) concept is a specific subcase that combines doctoral students, industrial needs and I&E. The target for Fall 2013 is to have 6 running DTCs.

Performance indicators: #involved PhD students, # created Doctoral Training Centres, # students in these DTC

2.4.2 Running activities in 2012

Row Labels		EIT Funding	Non-EIT Fund.
EDSL 11 275 Catalyst Doctoral Trainings Ce (Erik Jansen, f.w.jansen@tudelft.nl)	€	90 000	0
EDSL 11 337 Weaving I&E and PhD (merged pr (Christian Queinnec, christian.queinnec@upmc.fr)	€	380 000	1 279 000
EDSL 11 388 Imagine the Future in ICT (Pascal Guitton / Marie-Hélène Pautrat, INRIA, Marie-Helene.Pautrat@inria.fr; Pascal.Guitton@inria.fr)	€	30 000	10 000
EDSL 11 495 Setting up DTCs (merged propos (Christian Queinnec, christian.queinnec@upmc.fr)	€	940 000	3 095 000
EDSL 12 153 Lead I&E Education for PhD pro (Antti Paasio, antti.paasio@utu.fi)	€	110 000	45 000
Grand Total	€	1 550 000	4 429 000

A cooperation agreement between EIT ICT Labs and academic institutions is currently being drafted. Legal signatures are expected by the end of the summer. Fall 2012 will then see 40 doctoral students enrolled in the "EIT ICT Labs Doctoral Program on ICT Innovation". A Doctoral School Office will be set up at UPMC to concentrate and coordinate the management of this program. At least three DTCs are expected to be set up next Fall.

2.4.3 Priorities in 2013

The target is to enrol 100 doctoral students in the "EIT ICT Labs Doctoral Program on ICT Innovation" and to set up three additional DTCs. Beside this, partners will also have to organize the second year of I&E education along a scalable scheme.

2.4.4 Activities solicited in 2013

Participation of the partners as tasks within the two main activities is solicited. Proposals for I&E delivery, education for I&E educators as well as other proposals for new activities are also welcome.

The "Weaving I&E and PhD" activity expects partners to declare how many doctoral students they may be able to enrol and how the required I&E education is organized.

The "DTC" activity expects some new creations. Information on these new DTCs should be given according to the forthcoming “DTC Policy” document: their theme and their organization, especially detailing how the link with industry is pragmatically

2.5 Health and Well-Being

Key Phrase: Improve the quality of everyday life via the development of ICT enabled services supporting cost effective sustainable healthy lifestyle and ambient assisted living

Action Line Lead: Jean Gelissen, Philips, jean.gelissen@philips.com

MC Owner: Patrick Strating, EIT ICT Labs Eindhoven, Patrick.Strating@ictlabs.eu

2.5.1 Scope of the action line

The Action Line (AL) Health and Wellbeing (HWB) will improve the quality of everyday life via the development of ICT enabled services supporting a sustainable healthy lifestyle in the context of Ambient Assisted Living (AAL) and Active Healthy Aging (AHA). Global and societal trends like the aging population and the growing consumer empowerment call for an innovative and entrepreneurial ICT enabled & supported approach towards Health and Wellbeing.

This approach will improve the quality of life by supporting people to live uncompromised, comfortable, safe, and active lives also at an advanced age, and

will enable independent living while at the same time avoid social exclusion. Such services can be developed by both regular HWB service providers as well as innovative third party service providers. The HWB systems in Europe are gradually opening up to new providers, but high entry barriers for new parties are still in place.

The HWB action line focuses on providing meaningful & affordable services to achieve impact in the domains of mental wellbeing, nutrition, activity, sleep and social interaction (avoiding eExclusion) as well as solutions to deal with the various barriers (legal, political and economic (reimbursement schemes)) of product / service market introduction and the up scaling of local initiatives / ECO systems.

Achieving the overall goals of the action line requires close collaboration in the knowledge triangle of education, research and business development. The activities will involve and deploy EIT ICT Labs ERB (education, research and business) catalysts as much as possible.

Performance indicators: # new products & service ideas transformed to successful business, # new ventures as result of AL activities

2.5.2 Running activities in 2012

Row Labels	EIT Funding	Non-EIT Fund.
THWB 11 224 Stress@work (Natalia Sidorova, n.sidorova@tue.nl)	€ 275 000	2 179 000
THWB 11 226 WeCare (Kristina Höök, kia@sics.se)	€ 275 000	1 425 000
THWB 11 276 EIT labelled PDEng (Profession (Dr. M. Matters-Kammerer, m.matters@tue.nl)	€ 50 000	395 000
THWB 11 429 Experience & Living Labs Catal (Fabio Pianesi, pianesi@fbk.eu)	€ 200 000	845 245
THWB 11 750 International Business Modelin (Jens Holst (Siemens), jens-christian.holst@siemens.com)	€ 150 000	730 000
THWB 12 100 Affective Computing (Henk Eertink (Novay), Henk.Eertink@novay.nl)	€ 165 000	2 405 000
THWB 12 159 Healthy Consumption (H.Hermens, h.hermens@utwente.nl)	€ 250 000	1 102 000
THWB 12 161 Indoor Physical Activity (Francois Bremond, Francois.Bremond@inria.fr)	€ 250 000	1 688 000
THWB 12 179 Sleeping Well (Arto Laikari, Arto.Laikari@vtt.fi)	€ 275 000	1 616 000
Grand Total	**€ 1 890 000**	**12 385 245**

2.5.3 Priorities in 2013

The main subject for the 2013 activities is achieving a breakthrough in the fragmented market in Ambient Assisted Living for Active Healthy Aging (dealing with the technical, legal, cultural, international, … barriers) including the mobilization, strengthening & integration local HWB *business* communities.

2.5.4 Activities solicited in 2013

Anticipated activity size: one activity 1000 k€ dealing with the above-mentioned breakthrough; three activities of 300 k€ each for breakthrough innovations, two in the spearhead areas (mental wellbeing, nutrition, activity, sleep and social interaction) and one new ALL related spearhead; a few smaller activities w.r.t. landscaping to develop a longer-term HWB vision w.r.t. business opportunities (taking all potential showstoppers into account), innovation and business community building.

Adherence to the AL KPIs will be an important evaluation criterion, next to that:

- The main activity is expected to deliver a large-scale validated innovation addressing the Active Healthy Aging societal challenge & recognized by the Ambient Assisted Living community and main players in the associated public and private stakeholders.

- The three medium activities are expected to contribute directly to the AL KPI's and should address the integration of the ERB knowledge triangle.
- The smaller activities are expected to support the longer-term strategic innovation agenda, and/or address the ERB triangle integration for HWB.

2.6 ICT-Mediated Human Activity

Key Phrase: Supporting human communication and information needs

Action Line Lead: Lynda Hardman, CWI, Lynda.Hardman@cwi.nl

MC Owner: Marko Turpeinen, EIT ICT Labs Helsinki, marko.turpeinen@ictlabs.eu

2.6.1 Scope of the action line

Interactive digital media transform human activity in profound ways. A deeper understanding of this transformation is indispensable for guiding the emergence of new practices of a ubiquitous information society, including directed user communication, information access, broadcasting and publishing and social interaction.

Computers as Social Actors In order to participate as fully-fledged social actors, computers need to be endowed with the capability of *understanding* as well as *producing* social behaviour. Such generated social behaviour will bring about changes in belief, attitude and behaviour in the interacting human parties. The ensuing interaction paradigms and modalities will profoundly change our daily life, and raise important ethical and privacy issues. A common model of social behaviour is being developed in the course of 2012. This will enable the creation of demonstrator systems that can be used to validate aspects of the model in 2013.

ICT-mediated Presence A basic human need is to communicate with other humans. ICT allows different parties to be brought together in ways that emulate, if not replace, direct physical presence. Such mediated presence will cause the emergence of new social structures and is likely to require new structures for *trust*. Shared mediated spaces that *create meaning* and *communicate significance* are fundamental to this quest. Inquiries into aspects of *place*, *time*, *action* and *relation* in 2012 are providing insights that are being incorporated into demonstrators. These can be developed into installations in multiple locations to provide an environment for exploring needs of and solutions to social trust issues.

Multimodal Interfaces Multimodal interaction is a core driver for advanced services on devices such as smartphones, tablets or speech controlled TVs. Multimodal sensor technologies facilitate the interaction of humans with their physical environment in addition to combining this with online services. Activity in the real and virtual worlds can be supported simultaneously. A basis for these can be provided only if technological solutions are readily available to multiple, potentially competitive, providers. Software and hardware platforms that provide a unified environment for which novel services can be created are being developed during 2012. In 2013 these will be available for offering services and can be extended to explore means of efficiently processing the data streams, such as speech and gesture, needed for driving interactions.

User-media Interaction Human access to information sources, their creation and distribution is a driving factor behind ICT-development. The information itself has meaning for its users. Through richer computational expression of this meaning, applications can provide more directed access to the information required, enabling services devoted to specific tasks, users and content. While ICT Labs has few content owners as partners, the need for the creation of information services is crucial for developing Europe as a knowledge hub. Partners within ICT Labs have access to content partners via projects, and can thus establish the tools needed.

Playful Interaction Creativity is a fundamental enabler for innovation. Creativity and playfulness are closely connected, so that if we seek to stimulate users to be creative, then they should be supported in being playful. We seek to understand playfulness, and on this basis develop novel technologies for supporting playfulness. Alternatively, we can use playful interaction to support serious endeavours, such as learning, for both fully-abled users and those with special needs. Both playful interaction and user-media interaction are new topics for 2013, so that more exploratory activities are expected.

Performance indicators: # installations at CLCs, # industrial partners actively participating in activities, # documented substantial design/art contributions

2.6.2 Running activities in 2012

Row Labels	EIT Funding	Non-EIT Fund.
RIHA 12 124 Computers as Social Actors (Fabio Pianesi, pianesi@fbk.eu)	€ 240 000	1 086 000
RIHA 12 165 Multimodal Interaction Lab (Felix Burkhardt, Felix.Burkhardt@telekom.de)	€ 205 000	810 000
RIHA 12 197 RIHA Mediating Presence 2012 (Charlie Gullström, charlieg@kth.se)	€ 200 000	950 000
Grand Total	**€ 645 000**	**2 846 000**

2.6.3 Priorities in 2013

Computers as Social Actors

- Validate generated social behaviour in representative contexts
- Increase industrial participation
- Disseminate acquired knowledge and expertise

Mediated Presence

- Understand higher-level social mediated-communication needs
- Increase take-up within ICT Labs
- Explore solutions to social needs, such as trust

Multimodal Interfaces

- Enable cross-modal interaction
- Extract meaning from (multiple modality) sensor data
- Create stronger links with Smart Spaces action line

User-media Interaction

- Express computational meaning (metadata) of interpreted media
- Understand meaning users extract from media

- Create computational expressions of communication, such as (interactive) narrative, storytelling, design

Playful Interaction

- Understand playful interaction in educational settings
- Develop games to support learning and development
- Introduce playfulness in other (ICT-mediated human) activities

2.6.4 Activities solicited in 2013

While research is an important emphasis in this action line, activities including industrial participation are strongly preferred. Research endeavours should result in the creation of demonstrators along with a roadmap for their further deployment. Activities including ad hoc designers or media art practitioners are strongly encouraged, with the aim of prescribing sound processes and practices that can be industrially applied to facilitate innovations in ICT-mediated human activity.

2.7 Intelligent Mobility and Transportation Systems

Key Phrase: Promote ICT-based technologies, integration concepts and deployment activities for sustainable future mobility on European and global level

Action Line Lead: Christian Müller, DFKI, cmueller@dfki.de

MC Owner: Roberto Saracco, EIT ICT Labs Trento, Roberto.Saracco@ictlabs.eu

2.7.1 Scope of the action line

Already today, ICT is driving innovation in the intelligent mobility and transportation domain. By declaring its goal of becoming absolutely safe (zero accident) and sustainable (zero emission), “New Mobility” creates additional challenges and at the same time new opportunities with respect to ICT.

The Action Line Intelligent Mobility and Transportation Systems has the ambition to create new ICT business models for European car manufacturers like FIAT, Daimler, and Renault, first tier suppliers (like for example Bosch, Continental) as well as small and medium size companies (SMEs).

Performance indicators: # platforms, # tests and experiments, # labs, # users involved, # technology transfer cases, # application cases, feedback from cases

2.7.2 Running activities in 2012

Row Labels	EIT Funding	Non-EIT Fund.
TIMS 12 113 Emergent Social Mobility (Dominikus Heckmann, dominikus.heckmann@dfki.de)	€ 216 000	960 000
TIMS 12 175 Safe Mobility (Ilja Radusch, ilja.radusch@fokus.fraunhofer.de)	€ 373 800	1 881 000
Grand Total	€ 589 800	2 841 000

The match between activity name and challenge was encouraged in 2012. This is not the case for 2013 due to the evolutionary shift in focus from challenges to concrete and tangible results (see below).

2.7.3 Priorities in 2013

While seed activities in 2012 where centred on societal challenges, the priority for 2013 is creating tangible results with a clear contribution to the PIs on action line and KIC level.

Therefore, we created a (extendable) scheme that is meant to help partners characterizing their proposals according to these criteria. This scheme is described in the following section. Nevertheless, the set of challenges defined for 2012 is still relevant and should be taken into account. The challenges are:

1. Safe Mobility
    a. ICT for active safety in cars
    b. Cooperative vehicles
    c. Data and communication security
    d. Safety and security of mobility systems.
2. Sustainable Mobility
    a. ICT enablers for the market introduction of electric cars and “New Mobility”
    b. User-centric systems such as prediction of mobility demands and route profile
    c. Mobile systems for booking and accessing fleet vehicles
    d. Platforms for service provisioning and billing.
3. Socially Enriched Mobility:
    a. Reducing aggression in road traffic by strengthening empathy and eliminate perception of the vis-à-vis as opponents (connection point to SAFE mobility).
    b. Exploiting the community effects as additional motivational factor for ecological, safe driving (connection points to SUSTAINABLE and SAFE mobility).
    c. Using the existing social network as a basis for innovative car share/fleet concepts and cross modal mobility solutions (connection points to SUSTAINABLE and ACCESSIBLE mobility).
    d. Allowing an intuitive and appealing way of communicating with vehicles (from diagnostic memory to chat messages).
4. Accessible Mobility
    a. ICT for individual accessibility including barrier-free access and support for people with special needs.
    b. ICT for economical optimization of mobility and transportation.
    c. Improving networking between different modes of transport through integrated solutions for trip planning
    d. Real-time access to information on available transport modes (online information at home, in vehicles, at train stations, bus stops, on smart phones).

5. Autonomous Mobility:
    a. ICT for enabling autonomous behaviour of transportation means such as vehicle sensor data, sensors in the infrastructure etc.
    b. ICT related to problems in Human Computer Interaction of shared responsibility between passengers and vehicles.

2.7.4 Activities solicited in 2013

Below is a list of concrete types of innovations the action line is aiming at along with brief definitions:

Platform	A platform is a complex but self-contained software running on a server or in the cloud. A platform can be owned by a company or it can be open.
Framework	Multiple software components. A framework potentially includes a platform. A company typically owns part of the framework or tools for using a framework.
Algorithm	An algorithm is a description of software or the software itself that is capable of solving a specific problem. A company can own the algorithm or more complex software that contains the algorithm. An algorithm may be protectable with a patent.
Approach	A solution to a problem. An approach is more complex than one single algorithm. It can also be or involve a methodology. A company can implement a software based on an approach or offer services encapsulating it.
Solution	End-user software. A company can own and license a solution.
Component	A component is a part of a platform, solution, or framework. A component contributes to a larger entity. A company can own and license a component.
Infrastructure	Mostly hardware (can also include software). A company typically builds infrastructure or parts of it and sells it (inter alia to public authorities).
Standard	Like IEEE, DIN, ETSI, W3C or others. A company can contribute to standards and typically possesses knowledge to deploy products using the standard.
Knowledge base	A knowledge base is a database with complex relations, e.g., based on ontologies. A company can possess the knowledge base and license it or provide services based on the knowledge.

The activity description should indicate which type of innovation it is contributing to. However, please note that this list is not closed. Partners can propose new types or

extend definitions of existing ones as long as the suggestions are along the lines of the examples above.

2.8 Internet Technologies and Architectures

Key Phrase: Foster the development of new communication technologies and networking architectures

Action Line Lead: Ludovic Noirie, Alcatel-Lucent, Ludovic.Noirie@alcatel-lucent.com

MC Owner: Udo Bub, EIT ICT Labs Berlin, udo.bub@ictlabs.eu

2.8.1 Scope of the action line

Today's Internet does a lot more than what it was first made for, i.e., just communication between distant machines. It is now connecting connects everybody and everything, transforming our world on various aspects: information diffusion, knowledge sharing, people communication and socialization, economical exchanges, etc. The consequence is that today's networks are facing lot of challenges for their future evolutions. EIT ICT Labs supports activities that will help in delivering innovative solutions on the following aspects to face the following challenges:

- Multi-service networks that handle the increasing variety of applications carried in the networks (network and service integration, content or information-centric networking…) and the increasing variety of connected devices (sensors, Internet of Things, etc.).
- Efficient networks in order to face the increasing traffic volume and network complexity, which implies actions towards cooperation, integration and convergence of different technologies, network virtualization, and autonomic networking aspects.
- Usable networks to facilitate the acceptation and usage of the new network technologies and architectures by the operators and the users, which implies actions on network security, robustness and trustability, on business aspects and modelling, on standardization, etc.

The expected impact is the acceleration of the innovation process within and between the EIT ICT Labs partners, through technological transfers, patent filings and standard contributions. This will be possible through:

- Resource sharing for experimentation and testing. The large experimental platform deployments that the action line is favouring can be used by the community of researchers and developers, in university and industry, to test and validate innovative products and services for tomorrow's networks.
- The building-up of a large community of researchers and engineers, from various locations and entities (both industrial and academic ones), working together on well-identified topics. This will give the required critical mass to get a real impact.
- Collocation and mobility of engineers, researchers, and students, from various universities and enterprises. This will attract existing and new talents in a common place, reinforcing the impact of the research results for the industry.

Performance indicators: # labs, # experiments, # end users, # visits weighted by duration, # OS software packages, downloads & uses, # patents filing, # patents granted, # standard contributions, # technology transfers

2.8.2 Running activities in 2012

Row Labels	EIT Funding	Non-EIT Fund.
RITA 11 111 Distributed Content Delivery i (Ludovic Noirie, ludovic.noirie@alcatel-lucent.com)	€ 240 000	1 097 000
RITA 11 340 FITTING (Serge Fdida, serge.fdida@lip6.fr)	€ 200 000	1 117 500
RITA 11 643 Software-Defined Networking (S (Jörg Ott, jorg.ott@aalto.fi)	€ 220 000	1 700 000
RITA 12 191 Information-centric networking (Bengt Ahlgren, bengta@sics.se)	€ 280 000	1 375 000
Grand Total	€ 940 000	5 289 500

2.8.3 Priorities in 2013

To answer the challenges that today's networks are facing, the Internet technologies and architecture research action line conduct activities that are spanning all the network segments, from local/access to transport/core networks, for both wireless and wireline technologies, on the following three spearhead topics:

- *Multi-service networks* (Traffic / Application management, Network / Service integration, Content / Information-Centric Networking, Sensor Networks / Internet of Things)
- *Efficient networking* (Multi-technology cooperation/integration/convergence, Network Virtualization, Autonomic Networking, Self-management / Self-* mechanisms, Ad-hoc networks, Green Networks and Networking)
- *Usable networks* (Network security, Network robustness and trustability, Business aspects / models associated to the new technologies and architectures).

2.8.4 Activities solicited in 2013

The action line endeavours to run no more than 5 activities in 2013, spanning the three priorities described above. Collaboration between nodes is expected in each activity, but with a limited number of partners (typ. 3 to 5 per activity). The carrier project(s) of each proposed activity must be solid and well aligned with the proposed tasks.

In 2012 the most used catalysts in the "Internet technology & Architecture" action line are *Test Beds, Testing Platforms & Simulation Tools* (Research), *Experience Labs & Living Labs* (Research), and *Mobility Program* (Common). It is expected to still use these catalysts for 2013, but we are expecting to use in each activity other catalysts from the different categories (Education, Business, Research or Common), for example *Technology Transfer* and *Business Modelling*. Usage of the new catalysts proposed for 2013 is expected, especially *entrepreneurial research* and *standard booster*. The performance indicators of each proposed activity must be aligned with the used catalysts; some of them are indicated at the end of the *Scope of the action line* section above.

2.9 Master School

EIT labelled M.Sc. educational programs with integrated I&E module

Action Line Lead: Carl-Gustaf Jansson, KTH, cgja@kth.se

MC Owner: Patrick Strating, EIT ICT Labs Eindhoven, Patrick.Strating@ictlabs.eu

2.9.1 Scope of the action line

EIT ICT Labs Master School has the strategic ambition to equip students with skills for creativity, risk taking and entrepreneurial capacity by catalysing and renewing key technical ICT educational programs at advanced level. In a seven-year perspective, the Master School should have won a worldwide recognition. Likewise, its students should have become an elite group of forthcoming ICT professionals.

Unique features of this advanced level education are:

- Integration of first-rate technical majors with a standardized and deeply embedded business minor.
- Hands-on experience of innovation and entrepreneurship satisfying the EIT label requirements by design.
- Broad stakeholder involvement, in particular a mentorship program and guaranteed internships in EIT ICT Labs partner companies.
- Flexible combination of organizational and geographical mobility.
- Interdisciplinary and inter-node teambuilding amongst the students.
- Utilization of EIT ICT Labs co-location centre resources linking to EIT ICT Labs research and business activities.

The Master School has a uniform structure: a set of technical majors (90 ECTS) and a standardized business minor in Innovation and Entrepreneurship (30 ECTS). Students are enrolled in new local Master programs in ´ICT Innovation´ for which they will be awarded double degrees accompanied by an EIT Certificate documenting the EIT specific learning outcomes. The whole Master School education will be held in English and all partner universities are assumed to use ECTS units. The aim is to expand the Master School to 500 students within 3 years.

In 2012 the School runs 7 technical majors with 20-30 students/major. A partner university can contribute by being an entry point or exit point or both. The guideline is to have around 3 entry points and 6 exit points for each technical major. Currently 19 out of 28 partner universities contribute to the work.

Performance indicators: # universities with more than 5 registered students, # students registered, student satisfaction index, # graduated students, # students becoming entrepreneurs

2.9.2 Running activities in 2012

Row Labels	EIT Funding	Non-EIT Fund.
EMSL 11 034 Catalyst Lead I&E Module (Jan Kratzer, jan.kratzer@tu-berlin.de)	€ 390 000	425 000
EMSL 11 181 Embedded Systems Master Progra (Axel Jantsch, axel@kth.se)	€ 160 000	274 000
EMSL 11 189 Technical Major in Service Des (Heikki Saikkonen, heikki.saikkonen@tkk.fi)	€ 160 000	310 000
EMSL 11 195 Master Programme Major Digital (Markus Flierl, mflierl@kth.se)	€ 160 000	240 000
EMSL 11 201 Technical Major Internet Techn (Prométhée Spathis, promethee.spathis@lip6.fr)	€ 160 000	262 000
EMSL 11 284 Technical Major Human-Computer (Erik Jansen, f.w.jansen@tudelft.nl)	€ 160 000	295 000
EMSL 11 648 Schools and Camps Catalyst Dev (Krista Lagus, krista.lagus@tkk.fi)	€ 200 000	150 000
EMSL 11 886 Master School Organizational M (Carl-Gustaf Jansson, cgja@kth.se)	€ 295 000	380 000
EMSL 12 108 ICT Innovation Master Programm (Hans-Ulrich Heiss, heiss@tu-berlin.de)	€ 160 000	232 000
EMSL 12 203 ICT Innovation Master Programm (Hans-Ulrich Heiss, heiss@tu-berlin.de)	€ 160 000	220 000
EMSL 12 210 EIT ICT Capstone Project (EIT (Heikki Saikkonen, heikki.saikkonen@tkk.fi)	€ 50 000	120 000
EMSL 11 188 Master School Information Mana (Carl-Gustaf Jansson, cgja@kth.se)	€ 120 000	64 000
EMSL 11 198 Quality Assurance and Accredit (Hans-Ulrich Heiss, heiss@tu-berlin.de)	€ 130 000	130 000
EMSL 11 416 Master School Office (Victor Kordas, mps@admin.kth.se)	€ 875 000	485 000
EMSL 11 494 Master School Management (Carl-Gustaf Jansson, cgja@kth.se)	€ 80 000	40 000
EMSL 12 114 Strategic Education Outreach (Prof. Mats Brorsson, matsbror@kth.se)	€ 90 000	190 000
Grand Total	€ 3 350 000	3 817 000

2.9.3 Priorities in 2013

The 14 activities running in 2012 are also the basis for the 2013 planning:

1. *Management and Coordination*. The challenges for 2013 are: 1. The further embedding of this education within our local university structures, 2. The strengthened commitment of our partner companies for this education and the engagement of SMEs. 3. The revision of the economical models for fees, fee waivers and monthly allowances with the purpose to be scalable in a 500 student scenario.
2. *I&E Minor.* Focus for 2013: 1. First round of execution of I&E education, 2. Further integration of I&E minor and technical major content, 3. Intensified collaboration with CLC's and business activities, 4. Development of E-learning material, 5. Improving coaching - quality and quantity, 6. Pre-incubation of student teams resulting from BD lab courses or summer camps and schools.
3. *Master School Office.* This activity covers three main subservices: Admissions, counselling and information, and general student services. The challenges for 2013 are 1. to streamline operations for a growing student group, 2. to further enhance communication patterns and information provision between the office, the local administrators at universities, the students, and the teachers.
4. *Information and Dissemination*. The focus for 2013 is to establish a complete, integrated strategic plan of a continued brand building and acquisition model for the Master School. A new initiative is the launch of a high profile Alumni Association. A priority task is to inform industry. The implementation includes direct face-to-face campaigns within universities and concept development for the kick-off to accommodate larger formats. The ICT Labs MarCom team handles operational marketing.
5. *The Summer Program.* The summer program gives students the opportunity to apply their entrepreneurial competences within a relevant field. It also

provides an opportunity for students to interact with their colleagues of other majors and with other stakeholders such as companies, innovation centres, incubators, and research institutes. In 2011 a pilot was held on Health and Wellbeing. For the 2013 call two other proposals (next to HWB) are solicited in order to accommodate 150 students in total. Industry involvement is crucial.

6. *Organizational mobility*. For 2013 our mechanisms for generating high quality internships will be tested for the first round for 150 students. The ambition must be to increase the number of SMEs that can provide internships. The commitment of partner industries is crucial, also SMEs. The mentorship program launched in 2012 must be further developed. A continuation of the 2012 Capstone activity should be integrated here.
7. *Master School Quality Assurance*. The work in 2011/2012 has been focused on validation of that all plans for our combinations of technical majors and I&E minor satisfies the EIT criteria for EIT labelled education. For 2013 the goal is for the first time to run the proposed procedures for quality assurance, validating that all our local implementations fulfil what was planned. Also in QA industrial actors should play a role.

8-14. *Technical Majors.* The basic design and implementation is now done, but several challenges remain: 1. Integration between the business (I&E) and technical course modules, 2. Alignment with action line activities within EIT ICT Labs. No new majors will be considered for 2013. The technical content has also to be industrially well grounded.

2.9.4 Activities solicited in 2013

With the deadline of May 31, we invite the partners of EIT ICT Labs to contribute to the further planning and realization of the Master School part of the EIT ICT Labs work program for 2013. The bulk of the work for 2013 necessarily has to be planned as organic continuation and adaptation of activities already started in 2011 and 2012.

The focus for 2013 will be on consolidation and integration rather than on thematic expansions. Partners wishing to contribute to the 2013 planning are recommended to communicate with the contact persons given for each activity and discuss how their potential contributions can be integrated as tasks within that activity. If this is impractical, the second option is to formulate and submit a separate activity proposal. The issue of how to integrate such new activity applications with the base set will then be handled during the evaluation process. A relevant disclaimer here is that it is relatively little room for totally new activities in the 2013 work plan.

2.10 Networking Solutions for Future Media

Key Phrase: Address the challenges of providing an ICT structure supporting producers and consumers exchanging rich digitised media across heterogeneous domains

Action Line Lead: Henrik Abramowicz, Ericsson, henrik.abramowicz@ericsson.com

MC Owner: Gunnar Landgren, EIT ICT Labs Stockholm, gunnar.landgren@ictlabs.eu

2.10.1 Scope of the action line

The media industry is in midst of digitalisation with ever increased quality that transforms photos, music, traditional books, newspaper and other printed matters, and other analogue media into a turmoil of merging segments such as broadcasting, telecommunications, publishing, and entertainment. With digitalisation, consumers also become producers as shown by YouTube, Wikipedia, Twitter, or social media LinkedIn and Facebook. Other trends are the increasing interactivity of media and mixing different media during the same session (e.g., tweeting while watching TV).

With all this, the distance between producers and users has diminished, replacing the traditional distribution layers by direct interaction of producer and user roles. Digitalisation and the simplicity in creating and communicating media entail an enormous load on current storing and networking models for content delivery, retrieval and uploading implying that more effective ICT infrastructure is needed.

The wish by user to be always connected using any terminal on any network puts additional load on networks, with network access taking place more via wireless than fixed. This entails a tremendous need for increasing wireless capacity so that new methods for sharing and using new spectrum as well as becoming more effective in spectrum use are needed. Further implications on mobile networks are posed by emerging machine-to-machine communications needs.

The challenge we face is to provide new ICT infrastructure, capable of delivering rich data-intensive storage services that are user-friendly and can be personalized at competitive costs, across different domains, ensuring quality of service/experience, to end users in various contexts of use and still not increase the usage of energy but rather become greener.

Performance indicators: # innovations incubated, # new companies created by the KIC, # knowledge transfers to established companies, # new products / services / processes launched on the market, # standards contributions, # validated product and service demonstrations / pilots, # test-beds, # demonstrators, # living labs

2.10.2 Running activities in 2012

Row Labels	EIT Funding	Non-EIT Fund.
TFMC 11 863 Cross-linking Visual Informati (Josef Sivic, Josef.Sivic@ens.fr)	€ 139 800	1 660 000
TFMC 12 116 Event-centric Multimedia conte (Nicu Sebe, sebe@disi.unitn.it)	€ 295 500	1 665 000
TFMC 12 162 Mobile Media and Services Labs (Zary Segall, segall@kth.se)	€ 450 000	3 055 559
TFMC 12 180 Smart Content Delivery and Sto (Ming Xiao, ming.xiao@ee.kth.se)	€ 210 000	1 269 700
TFMC 12 186 TFMC Innovation Radar LTU (Kåre Synnes, unicorn@ltu.se)	€ 130 000	690 000
TFMC 12 199 Seamless P2P video streaming f (Seif Haridi, seif@it.kth.se)	€ 180 000	942 000
TFMC 12 207 Enabling content delivery by t (Neiva Lindqvist, neiva.lindqvist@ericsson.com)	€ 190 000	1 140 000
Grand Total	€ 1 595 300	10 422 259

2.10.3 Priorities in 2013

Mobile and social business media services

- Define new consumer oriented media and integrating with Internet of Things (IoT) where the mobile acts as a central device and integrating IoT into social and business media
- Content creation and retrieval for 3D TV

- Ease of service creation such as SW and Platform as a Service and market deployment, monetisation, towards enterprises
- Semantic context modelling and media description
- Socio, cultural and educational aspects of multi-media
- Mobile app contests that are multi-sited but also research focused

Multimedia content analysis and processing

- Large scale analysis
- Context and content-aware pre- and post-processing of content
- Meaningful sensor data fusion, multi-modal data analysis, visualisation
- Multimedia content evaluation and benchmarking
- Media Search and retrieval supported by new approaches of, recommendations, and personalisation and contextualized interfaces.
- Content analysis, access and organization for wearable devices

Networking solutions over heterogeneous networks

- New architecture of content delivery e.g. peer-to-peer and information centric networking
- Implications on radio and network by growing M2M and IoT devices
- Novel Access networks for radio and mobile backhaul
- Fixed mobile convergence
- Energy aware/efficient radio and networking
- Transaction oriented communication
- Cognitive radio

2.10.4 Activities solicited in 2013

Cross-Layer integration

Cross-layer optimisation including the interaction of radio, networking and applications is an important topic to achieve proper QoS/QoE for network-aware services for future media.

An important driver for networked solutions for future media will be the applications and services that will produce, transform and consume this media. Thus we need to expose relevant network capabilities and find flexible solutions for the services to adapt to and control the different network configurations. So both the network and applications need to consider each other's capabilities.

There is an inherent trade-off between service storage, media processing and network delivery components. Network delivery will be an integrated part of future services (e.g. transparent to the users) and flexible service solutions (runtime service composition and adaptation) that fulfil the business service level agreements (SLA) and best align them to the available network QoS are needed.

Integration

Education, Research and Business topics need to be integrated e.g. courses to students, innovation radar activities and general research. Specific emphasis should also be made in soliciting and understanding the media processing market and

vendors in order for later integration of potential media processing vendors into ICT labs activities to achieve cross-layer integration. Finally, clear integration with carrier projects and Horizon 2020 is important to achieve the EIT ICT Labs added values at a European level.

2.11 Privacy, Security and Trust in the Information Society

Key Phrase: Understanding how information technologies impact the privacy of individuals and developing new privacy preserving and secure technologies to protect them

Action Line Lead: Sébastien Gambs, INRIA, Sebastien.Gambs@inria.fr

MC Owner: Roberto Saracco, EIT ICT Labs Trento, Roberto.Saracco@ictlabs.eu

2.11.1 Scope of the action line

Information Technologies have invaded many aspects of people's daily lives, creating new possibilities but also raising privacy concerns to the point that some individuals feel that they no longer have suitable guarantees or control of their privacy. Indeed, protecting the privacy of individuals is one of the main challenges of the Information Society but is difficult to achieve as individuals constantly leave digital traces of their actions and whereabouts, often without even knowing it. If an unauthorized entity gathers these digital traces, he (or she) can use them for malicious purposes ranging from targeted spam to profiling, and even identity theft.

From the technology viewpoint, a number of Privacy Enhancing Technologies (PETs) and Privacy Aware Architectures have been proposed. So far, these technologies have not received strong public interest and are not yet widely used. However, the European Commission is currently revising the Data Protection Directive and strengthening it towards a regulation, for instance with the principle of "privacy by design", which integrates the privacy issues in the design phase of a system or application. Security and trust can be seen as different but strongly complementary notions to privacy. For instance, a necessary (but not sufficient) condition for achieving the protection of privacy is that the designed architecture also ensures basic security properties, such as confidentiality and authentication, in order to prevent unauthorized entities from accessing the personal data of individuals. In addition, the design of secure and privacy-preserving technologies, as well as the integration of transparency and accountability mechanisms, is also a fundamental condition for the development of trustworthy products that will be adopt by individuals and deploy on a large scale.

The goal of the action line is to address the new challenges raised by the most recent developments and usages of information technologies (e.g., geo-located applications, social networking, profiling, pervasive computing, data mining) by solutions to enhance the privacy protection of individuals through secure and trustworthy technologies. Essentially, this action line is transversal to most of the action lines of EIT ICT Labs and should also contribute to their developments.

Performance indicators: # research visits, # research visit months, # joint events, # living labs, # data collected and shared; # summer / winter schools; # results taken up by other action lines.

2.11.2 Running activities in 2012

Row Labels	EIT Funding	Non-EIT Fund.
RPST 12 154 Location Privacy (Sébastien Gambs, sgambs@irisa.fr)	€ 140 000	560 000
RPST 12 172 Privacy-Preserving Smart Space (Dr. Seyit Ahmet Camtepe, camtepe@dai-labor.de)	€ 281 000	1 186 000
Grand Total	**€ 421 000**	**1 746 000**

In 2012 the action line is running in "incubation mode" with a limited number of activities.

2.11.3 Priorities in 2013

Privacy

- Addressing the challenges of data portability and the right to be forgotten
- Economics of privacy
- Privacy assessment
- Privacy-preserving architectures for location-based services, social networking sites and sensing environments
- Privacy-preserving personalization and ad systems

Security

- e-Health security and privacy
- Security for networking infrastructures
- Security for mobile devices and embedded systems
- Secure and private solutions for analysing and mining Big Data
- Security for the Internet of Things

Trust

- Design of accountability, sovereignty and transparency mechanisms
- Development of methods and best practices for engineering privacy and security by design in real systems
- Impact of profiling and data mining on privacy and discrimination
- Trustworthy Cloud computing
- Usability aspects of security and privacy.

2.11.4 Activities solicited in 2013

The action line is focused on system research with concrete demonstrators as deliverables. A road map should be specified for moving the demonstrators into useable tools, open source, or testbed components. Relevance of the demonstrators to other action lines should be made explicit.

2.12 Smart Energy Systems

Key Phrase: Drive European ICT innovation for future energy systems

Action Line Lead: Ariane Sutor, Siemens, ariane.sutor@siemens.com

MC Owner: Udo Bub, EIT ICT Labs Berlin, udo.bub@ictlabs.eu

2.12.1 Scope of the action line

Meeting EU's climate change and energy policy objectives for 2020 and beyond will require a major transformation of our electricity infrastructure. The paradigmatic change from the fully controllable, powerful point sources in the classical power grid to the distributed area sources of alternative energy sources – such as wind and solar – as well as the bi-directional load management e.g. for E-Cars in the Smart Grid calls for new qualities in the system-wide capture, aggregation and processing of basic data. This concerns the technical hallmarks of the Smart Grid such as virtual power plants and adaptive balancing geographies as well as the human factor on the consumption side, the aptly named but still elusive Smart customer. As the power grid becomes, thus, ICT-integrated, at the same time the ubiquitous ICT networks become energy-aware. This convergence is of technical, conceptual and economic nature. As ICT is the key enabler for innovations and new business in Smart Grid this is resulting in a fast growing market in Europe, U.S. and Asia for new ICT based SES products, services and solutions.

The AL Smart Energy Systems focuses on three programmatic challenges: (1) user experience and prosumer involvement, (2) a large compound of technical test beds and (3) end-to-end consideration of energy-aware ICT infrastructure, respectively.

Performance indicators: # patents filed / granted by EPO**,** # top publications**,** # pan-European testbeds, experience & living labs**,** # new product and service demonstrations / pilots**,** # companies involved in EIT ICT Labs SME partnership programs**,** # knowledge transfers to existing companies

2.12.2 Running activities in 2012

Row Labels	EIT Funding	Non-EIT Fund.
TSES 11 813 Smart Grid Value Modeling and (Prof. Dr.-Ing. Kai Strunz, kai.strunz@tu-berlin.de)	€ 216 000	990 000
TSES 11 814 European Virtual Smart Grid La (Prof. Dr.-Ing. Kai Strunz, kai.strunz@tu-berlin.de)	€ 457 000	1 532 000
TSES 11 824 Smart Energy Summer School (Gilney Damm, gilney.damm@lss.supelec.fr)	€ 125 000	310 000
TSES 11 830 Future Scenarios in Smart Ener (Han La Poutre, han.la.poutre@cwi.nl)	€ 330 000	1 022 896
TSES 11 831 Open SES Experience Labs for P (Bernhard Schätz, schaetz@fortiss.org)	€ 412 550	1 912 558
TSES 12 178 SESSec-EU - Networked Smart En (Daniel Freund, Daniel.Freund@DAI-Labor.de)	€ 216 500	1 308 000
Grand Total	€ 1 757 050	7 075 454

2.12.3 Priorities in 2013

1. Smart Energy Prosumer Experience
    - Open SES experience lab for prosumer experience & new services
    - Software for prosumer involvement (e.g., smart phone apps or market places)
    - Hardware for prosumer involvement (e.g., Smart Home gateway)
    - Accompanying economical research concerning new market rolls and related business models, regulation and taxation

2. ICT Infrastructure for Smart Grid
    - Smart Grid lab & simulation tools (technical & economical)
    - Smart Energy Management Systems (e.g., decentralised control mechanisms, integration of EV's or industry / commercial buildings, storage management)
    - Micro Grids & Plug & Play for Smart Grid components
    - IT Security for Smart Grid & Privacy
    - Smart Grid, Smart Meter data mining (e.g., forecasting or behaviour analysis)
3. Green ICT
    - Energy efficiency by design (e.g., development & education transfer)
    - Load adaptive ICT infrastructure
    - Energy efficient protocols & software

2.12.4 Activities solicited in 2013

2013 activities should be related to the described challenges and priorities; thereby the contribution to the ICT Labs innovation objectives and the selected action line PIs is crucial. Basis for any activity should be a strong carrier project. An integration of business catalysts and SMEs in the activities is considered beneficial. A clear European dimension and participation from industry partners is specifically desired.

Proposals for the continuation of core activities of the action line are very welcome, potentially also in a more integrated form. The creation of a pan-European smart energy test-bed should remain a central task and could be enhanced by dedicated business models and product development. The continuation of the smart energy summer school is also solicited. For the collaboration with KIC InnoEnergy and European utilities a "round table" activity could be proposed.

Additional proposals for new or continued activities will be gladly accepted.

2.13 Smart Spaces

Exploit information in every-day working and living environments to create comfortable service experiences for users

Action Line Lead: Petri Liuha, Nokia, Petri.Liuha@nokia.com

MC Owner: Marko Turpeinen, EIT ICT Labs Helsinki, marko.turpeinen@ictlabs.eu

2.13.1 Scope of the action line

Smart Spaces are intelligent built environments that facilitate users' everyday practices, use resources and costs efficiently, create rich user experiences, and enhance users' awareness of the local opportunities. Prime business scenarios include smart retail environments and public areas providing better service to customers and citizens, and home and office environments making living and working more comfortable and efficient. Smart Spaces also open up opportunities in gaming and education.

Smart Spaces consist of various interconnected embedded systems, services, devices, and mobile terminals. These integrate the information of the local surroundings and people with information from the Internet to form a digital virtual

space. Natural and rich user interfaces provide open access to the digital applications and services in a convenient way. Smart Spaces have means for perceiving, measuring and storing context information of entities in the environment. Technical advances in analysis of local activities, users, and objects with location information will create new business potential.

Smart Spaces applications are based on a combination of proprietary solutions and open services. The business models can follow the web-based solutions where the smart space specifics of the service come from locally and contextually relevant data. Furthermore, larger amounts of local information can be aggregated and analysed for provision of further services and service promotion. The variety of different environments and services give a potential for creating new experiences and growing new businesses in a large scale.

The medium-term focus of the action line is in the following topics:

- *Creation of new solutions with business perspectives* for e.g. smart retail environments, public areas, home and office environments.
- *Creation and innovation of new solutions in living labs environments* for testing, exploration, experimentation, and validation.
- *Offering of developer-friendly solutions* for essential technologies like user interaction, localization and other areas similarly relevant for smart spaces. These actions will also offer education on the topics.
- *Service design and engineering*, where a key challenge is the creation of attractive Smart Space service platforms in the spirit of open innovation that can feed a vivid and diverse ecosystem of Smart Spaces services.

Performance indicators: # solutions tested with real users, # installations of SSAL solutions in CLCs, # students in courses labelled with smart spaces topics, # take-up of EIT ICT Labs catalysed products and services, # new ventures.

2.13.2 Running activities in 2012

Row Labels	EIT Funding	Non-EIT Fund.
TSSP 11 430 Public Living Labs - Building (Jörg Müller, hans-joerg.mueller@telekom.de)	€ 260 000	800 000
TSSP 11 431 Smart Space Research and Appli (Juha-Pekka Soininen, juha-pekka.soininen@vtt.fi)	€ 221 500	1 967 558
TSSP 11 547 PI3 - Pervasive Information, i (Giulio Jacucci, giulio.jacucci@hiit.fi)	€ 338 500	3 656 503
TSSP 12 146 EFX - EIT Office Experience (Kai Kuikkaniemi, kai.kuikkaniemi@hiit.fi)	€ 50 000	280 000
TSSP 12 202 Semantic, Adaptive and Infomed (Zary Segall, segall@kth.se)	€ 300 000	1 973 000
TSSP 12 205 TIK - The Interaction Toolkit (Giulio Jacucci, giulio.jacucci@hiit.fi)	€ 295 000	1 989 000
Grand Total	€ 1 465 000	10 666 061

2.13.3 Priorities in 2013

Key application areas considered include:

1. *Public spaces* like exhibition areas, travel and waiting areas, including games and applications using user generated content in public areas
2. *Retail environments* – solutions supporting the retail business and providing new services for the customers.
3. *Office environments* – creating the level of standard and complete solutions for the smart office working environment.

4. *Home and households* – solutions easing the every-day life of different kinds of users and user groups.
5. *Education* or *event applications* with new ways of interacting in small or large rooms.

In addition to application areas, certain technical and other common solutions and enablers are included in the agenda. These are:

1. Enabling technologies for *human centred interaction* in smart spaces
2. Generic *localization technologies* supporting applications
3. *Ecosystem* approach and actions for the creation of category of smart spaces applications.

2.13.4 Activities solicited in 2013

Solutions building on the existing activities and addressing new application areas are especially encouraged. Especially, the Smart Spaces AL will pursue the deployment of smart spaces applications in the ICT Labs co-locations centres, involving them as Living Labs and the ICT Labs community as the first test users.

3 Catalyst Development

This section of the Call covers only activities aimed at the development and evolution of the catalysts, or responsible on offering the catalyst as a service to action lines. Partners interested on applying catalysts should prepare and submit their proposals to the action lines. Please refer to the Catalyst Tutorial for the intended use of the catalysts.

3.1 Education Catalyst Development

Key Phrase: Catalyse education of next-generation talents in close interaction with action lines

Education Director: Hannu Tenhunen, KTH, hannu@kth.se

3.1.1 Current Status

The development of education catalysts is organized directly under the Education Director, in close co-operation with the education-related action lines (Master School, Doctoral School).

Performance indicators (in addition to PI's of Master School and Doctoral School): # programs of EIT ICT Labs cloned, # student involved with EIT ICT Labs inspired programmes, # strategic active partnerships.

3.1.2 Running activities in 2012

At present, the education catalysts are developed and maintained:

- Innovation & Entrepreneurship Education for Master Programs, lead: Jan Kratzer, jan.kratzer@tu-berlin.de
- Innovation & Entrepreneurship Education for Doctoral Programs, lead: Antti Paasio, antti.paasio@utu.fi
- Industrial Doctoral Training Centre, Erik Jansen, F.W.Jansen@tudelft.nl
- Quality Assurance and Accreditation, lead: Hans-Ulrich Heiss, heiss@tu-berlin.de
- Summer and Winter Schools and Camps, lead: Krista Lagus, krista.lagus@tkk.fi
- Student and Teacher Mobility, lead: Marianne Söderlind, mps@kth.se

3.1.3 Priorities in 2013

In addition to evolution of the existing catalysts, the priority for 2013 is on launching specific actions on outreach education. The aim is to establish a strategic institutional co-operation web on education with other leading knowledge and innovation communities in the world. This may take place in supporting short intensive educational events, or supporting the "cloning" of EIT ICT Labs educational programs and content in other nodes, including the approaches of including industry's active participation.

3.1.4 Activities solicited in 2013

For existing catalysts we request:

1. A detailed proposed Activity Template for 2012.
2. A qualitative catalyst description and plan (5-10) pages, attached to the template using EasyChair.

New partners interested in joining the activities developing the existing catalysts are advised to contact directly the leads of the activities.

In education outreach, we focus on creating an inventory of strong institutional partnership contacts, which EIT ICT Labs partners already have, to other strong knowledge and innovation communities in the world (including rapidly developing economies). The purpose is to prepare the scaling of the existing institutional co-operation to KIC level and, at the same time, create significant strategic new funding base for joint activities in close co-operation with involved third parties and their home governments.

We also solicit proposals of new catalyst development. The new catalysts should enable new practical ways to raise the quality of innovation and entrepreneurship education to world-class level, and to fully integrate universities and students to the innovation ecosystem of EIT ICT Labs and its nodes.

3.2 Research Catalyst Development

Key Phrase: Catalyse added value from research

Research Director: Olivier Festor, INRIA, olivier.festor@ictlabs.eu

3.2.1 Current Status

Research catalysts are associated with activities aiming at developing them further or ensuring strong coordination and/or harmonized usage among and reporting of activities applying them to carriers.

Open Source Booster: This catalyst intends to foster the exploitation of innovative open source software by the industry. The catalyst evolution activity might include the following tasks: intellectual properly rights analysis; best practices to ensure a smooth transfer and exploitation of open source software and to benchmark them; cartography and qualification of the assets; dissemination campaigns and an annual showcase. In addition, the activity should specify common quality and progress indicators for boosted Open Source initiatives and monitor these indicators during the supported duration. Lead: Olivier Festor, olivier.festor@ictlabs.eu.

Patent Booster: The objective of the Patent Booster catalyst is to generate more patent applications and patents from research and help them to extend their patent initiative at the European level. The Patent Booster catalyst will increase researcher awareness and knowledge about patents and their commercial importance. Activities include compilation of training materials, training sessions using the co-location node facilities, establishment of processes and strategies to foster patent submissions and to manage the patenting process. With the catalyst the current patent landscape, opportunities and challenges will be assessed for carrier projects to increase their

commercial viability and patenting possibilities. Moreover, activities will be performed to proactively search for, assess and boost existing patentable results. Lead: Lisa Eriksson, lisaeric@kth.se.

Standards Booster: This catalyst intends to foster the impact of EIT ICT labs research results on standardization. The following tasks might be present in a coordination activity of the Standards Booster catalyst: cartography of relevant standardization bodies, inventory of on-going efforts by the KIC partners in relation with activities in the Action Lines, evaluation of impact potential of submitted activities, setup of best practices and education efforts on standardization. Lead: Olivier Festor, Olivier.festor@ictlabs.eu.

Test Beds, Testing Platforms & Simulation Tools: This catalyst aims at developing a common culture of experimentation in research for more innovation. Examples of tasks associated with the coordination activity are: inventorisation of existing testbeds; ensure their presence in the EIT ICT Labs web site; organization of training sessions associated with the testbeds using the co-location node facilities; demonstrations that can be used at the co-location nodes; best practices and methodologies; success stories. Lead: Olivier Festor, olivier.festor@ictlabs.eu.

Experience & Living Labs: The objectives of the catalyst are (1) to enable KIC-wide use of Experience & Living Labs (E&LL) to integrate Education, Research and Business aspects and to speed up innovations and (2) to foster their impact and visibility beyond the KIC. Possible tasks associated with the coordination activity are: inventory of E&LL lab facilities amongst partners and identification of the services that they offer; pilot(s) activities with multi-node experimentation to explore and display multi-node E&LL possibilities; dissemination or exchange of methodologies and best practices; policies and protocols for access of partners to E&LL; exploring the concept and benefits of linked facilities. In addition, the coordination activity should specify common quality and progress indicators for boosted E&LL in the KIC and monitor these indicators during the supported duration. Lead: Fabio Pianesi, Fabio.Pianesi@fbk.eu.

Entrepreneurial Research: The objective of the Entrepreneurial Research catalyst is to support entrepreneurial research initiatives leading to further developing research results towards concrete and measurable exploitation. To complement the core activity of this catalyst which is funding selected entrepreneurial research efforts integrated into activities in action lines, additional activities of this catalyst are should be targeted to inspire and motivate researchers towards entrepreneurial research. This includes but is not limited to organization of entrepreneurial research days involving researchers having already a successful Entrepreneurial experience and thus acting as a role model for EIT ICT Labs researchers, organizing camps & come-together events for researchers interested in entrepreneurial research. Lead: Olivier Festor, olivier.festor@ictlabs.eu.

3.2.2 Activities solicited in 2013

It is highly recommended to contact the Research Director before submitting a coordination activity proposal to avoid duplication of effort, as there will only be one coordination activity associated with the aforementioned research catalysts.

Proposals to new research catalysts are also solicited, especially focusing on the agility, impact, and transparency of research activities and facilitating the uptake of research results. Also catalysts for linking SME's to research are sought.

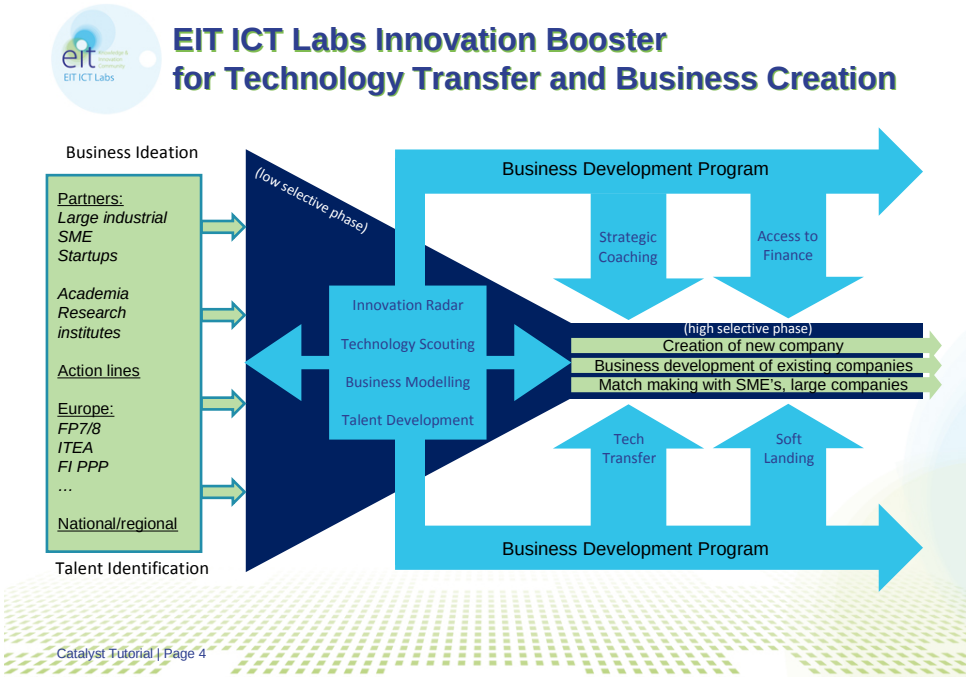
3.3 Business Catalyst Development

Key Phrase: Catalyse new business by providing a comprehensive set of business incubation services to EIT ICT Labs partner network and the action lines

Business Director: Klaus Beetz, Siemens, klaus.beetz@ictlabs.eu

3.3.1 Current status

The strategic goal of the business activities of EIT ICT Labs is to build a comprehensive end-to-end platform for catalysing new ventures, growing existing SME's to European level and world-class scale, and facilitating the renewal of established large industries. Entrepreneurship, that forms an essential ingredient in all these objectives, is all about people and ideas that will feed our funnel approach out of EIT ICT Labs partner network.



Business catalysts focus on providing end-to-end support for turning research results to successful innovations, ventures, and growth in an accessible, pragmatic, flexible, and agile manner. This set of catalysts will foster innovation on both the entrepreneurial path and the industrial path, building upon the local innovation ecosystems already available at EIT ICT Labs nodes. A key goal is to create an open market for problems and solutions by matching research results with potential entrepreneurs or industry partners. Another key aspect is to focus not only on start-ups, but also already established ventures bent on international growth.

Performance Indicators: # innovations incubated, # new companies incorporated, # companies in the EIT ICT Labs SME partnership programs, # knowledge transfers to established companies, # new products / services / processes launched on the market, # foresight studies, # benchmark studies performed

3.3.2 Running activities in 2012

Row Labels	EIT Funding	Non-EIT Fund.
BCDV 11 062 Best Practice Benchmarking Cat (Ernst Bernard, Ernst.Bernard@siemens.com)	€ 328 000	84 000
BCDV 11 255 Innovation Radar (Magnus Boman, mab@sics.se)	€ 550 000	442 000
BIEC 11 079 Business Club (Mika Naumanen, mika.naumanen@vtt.fi)	€ 164 000	1 610 000
BIEC 11 654 Technology Transfer Program Ca (Gilbert Harrus, gilbert.harrus@inria.fr)	€ 595 000	1 372 500
BIEC 11 935 Development of Business Modeli (Anja Mante, anja.mante@eict.de)	€ 295 000	395 000
BIEC 12 143 European SME Program (Isabelle de sutter, i.desutter@systematic-paris-region.org)	€ 345 000	765 500
BNBC 11 003 Access to Finance (Pär Hedberg, par.hedberg@stockholminnovation.com)	€ 123 000	66 500
BNBC 11 078 Entrepreneurs Club (Mika Naumanen, mika.naumanen@vtt.fi)	€ 90 000	171 500
BNBC 11 310 Strategic Coaching (Aard Groen, a.j.groen@utwente.nl)	€ 568 900	2 608 000
BNBC 12 103 Building Entrepreneurial Compe (Aard Groen, a.j.groen@utwente.nl)	€ 652 000	2 097 000
Grand Total	€ 3 710 900	9 612 000

3.3.3 Priorities in 2013

In 2013, the main goal is the deployment of the business catalysts in a coherent and integrated way that on one hand supports the whole innovation chain from technology scouting and screening till successful business deployment, and on the other hand covers all our partners from universities and research institutes as well as start-ups, SME's and large companies to detect, stimulate and boost innovation opportunities. The catalyst set will be re-shaped based on the experiences of its application so far.

The business catalysts are primarily implemented as services provided by the Business Development Program (BDP). The BDP consists of team of up to 4 business developers in each node. This team covers the complete business catalyst expertise and runs a business development program offering an integrated support for all stages of the innovation chain. The team applies the business catalysts to concrete cases and operates over the whole funnel.

3.3.4 Activities solicited in 2013

For existing business catalysts we request a detailed proposed activity plan for 2012 (max. 5 pages) with relevant quantitative KPIs, and a clear description of the added value for the Action Lines. New partners interested to contribute to the present catalysts should contact directly the leads of the activities listed above. Please observe that any new partners to existing catalysts are expected to contribute significantly to the work of Business Development Program teams.

In addition, proposals aiming at development and piloting of new business catalysts are solicited. The new catalysts should complement the existing set, provide significant added value, and contribute the KPI's of the KIC.

Annex: Activity Level Performance Indicators

PIs regarding Education activities	Definition
# EIT accredited M.Sc. programs in the Master School [E1.1]	All individual M.Sc. programs within the Master Schools having achieved the EIT brand label.
# students registered in the M.Sc. programs of the Master School [E1.2]	Number of students enrolled in Master of Science programs labelled by the EIT.
# graduates from the programs of the Master School [E1.3]	Number of students having passed an EIT-branded M.Sc. program. Documented by lists of graduates per program.
# EIT branded doctoral programs in the Doctoral School [E1.4]	Number of doctoral programs that satisfy the requirements of the EIT brand and are affiliated with the EIT ICT Labs Doctoral School.
# EIT-branded PhD students enrolled [E1.5]	Number of students enrolled in a PhD programmes labelled by the EIT.
# EIT-branded PhD graduates [E1.6]	Number of students having completed an EIT-branded PhD programme. Documented by lists of graduates per PhD program.
# Doctoral Training Centres [E1.7]	Number of Doctoral Training Centres with EIT accreditation (documented by respective list with names of training centres).
# PhD students belonging to the DTCs [E1.8]	Number of students belonging to EIT ICT Labs DTC's and enrolled in PhD programmes accredited by the EIT (documented by list of affiliated students).
# PhD graduates from DTCs [E1.9]	Number of PhD graduates affiliated with DTC's.
# EIT ICT Labs outreach M.Sc. education programs [E1.10]	Number of M.Sc. programs satisfying the criteria of EIT ICT Labs outreach education program.
# students involved in EIT ICT Labs outreach education programs [E1.11]	Number of students in the outreach programs.
# M.Sc. graduates from EIT ICT Labs outreach education programs [E1.12]	Number of students graduating from the outreach programs.
# EIT ICT Labs branded professional education programs [E1.13]	Number of professional education and training programs with EIT ICT Labs branding.
# participants in EIT ICT Labs branded professional education programs [E1.14]	Number of participants who have completed professional education and training programs with EIT ICT Labs branding.
# universities with more than 5 registered students in the Master School [E1.15]	Number of universities with more than 5 registered students, measured after the new 1st year students are admitted and have been registered.
# faculties teaching EIT branded programs [E2.1]	All faculties teaching EIT branded programs in the reach of the reporting activity. Documented by lists of names of these faculties. Duplicates to be identified by Education Director and resiliated across the reporting activities.
# entrepreneurs teaching in EIT-branded programs [E2.2]	Number of entrepreneurs teaching/lecturing in EIT branded programs, i.e. summer/winter schools, I&E module, PhD programs, M.Sc. Programs in the reach of the respective activity. Documented by lists with names of lecturers and the respective event where the lecture has been given. Duplicates to be identified by Education Director and resiliated across the reporting activities.
# EIT-branded I&E modules [E2.3]	Number of EIT-branded Innovation and Entrepreneurship modules within M.Sc. programs. Documented by lists of I&E modules and names of respective M.Sc. Programs.
# guest lectures (by externals) [E2.4]	Number of guest lecturers in programs, e.g. summer/winter schools, M.SC. programs, PhD programs. Documented by lists of lecturers and names of respective events.

# M.Sc. student applications for EIT branded programs [E2.5]	Number of students applying for an individual EIT ICT Labs branded Masters program. Documented by lists of student applications per program which is consolidated at KIC level by Education director.
# PhD student applications for EIT branded programs [E2.6]	Number of students applying for an EIT branded PhD program. Documented by lists of applicants per program.
# schools and camps [E2.7]	Number of individual events of summer / winter schools and camps organized by ICT Labs entities.
# participants in schools and camps [E2.8]	Participants in summer/winter schools and camps irrespective of affiliation. Documented by lists of participants and name of respective event.
# teaching days in schools and camps [E2.9]	Number of teaching days in schools and camps.
# ETCS points from M.Sc./PhD education [E2.10]	ETCS point of PhD and M.Sc. students enrolled in EIT-branded programs.
# ETCS points of EIT ICT Labs outreach education [E2.11]	ETCS points gained by (M.Sc./PhD) students outside EIT labelled programs from EIT ICT Labs originated education.
# ETCS points from schools and camps [E2.12]	ETCS point of PhD and M.Sc. students participating in EIT-branded summer/winter schools and camps.
# industrial internships completed by M.Sc. students [E2.13]	Number of internship of M.Sc. students of EIT accredited programs who have completed an internship in industry. Data is to be recorded by Education action line by a named list of students and the respective company offering the internship.
# M.Sc./ PhD theses connected with an action line [E2.14]	Number of completed M.Sc. theses/PhD theses on a topic initiated by and contributing to an action line. Named list of students, thesis names, and awarding institutes kept by E-Dir.
Student satisfaction index [E2.15]	Overall student satisfaction per EIT labelled program measured on a five-point scale ranging from -2 to +2. The questionnaire may have several topics, but only an overall average is reported. The questioned entities may be students in a program, several programs, etc.
Placement of graduates, alumni [E2.16]	Number of graduates from EIT labelled M.Sc. and PhD programs (freshly graduated or after some intermediate affiliation) placed to top-rated employers, start-ups, or self-employed entrepreneurs - collected only on KIC level. Data collected by KIC alumni network.
Employer satisfaction index [E2.17]	Results of a poll conducted by ICT Labs about the satisfaction of employers with employees being counted under E2.16.
PIs regarding to Research activities	**Definition**
# pan-European testbeds, experience & living-labs [R1.1]	Labs and testbeds are technical testing facilities developed specifically as outputs of KIC value added work or integrated with KIC value added work from former projects or facilities of industry or academic partners.
# validated new product / service demonstrations and pilots [R1.2]	A product / service pilot or demonstration that has been generated as output of KIC value added work and validated against a specific use case / business case (e.g., in a testbed, living lab, or field experiment).
# standards contributions [R1.3]	Number of contributions to international standardizations bodies, e.g. IETF, ISO etc. Each contribution must be recognisable as single entity in the standard's documentation. Documented by lists of contributions and name of respective standardization body. Research director is responsible for identifying duplicates and resilience across activities.
# top publications [R1.4]	Number of publications in topic-specific journals and talks at conferences about the achievements of KIC added value work. All contributions have to undergo a formal evaluation process by the body they are contributed to. Only such publications where at least one author uses an EIT ICT Labs affiliation or such that acknowledge support from EIT ICT Labs are eligible. Documented by list of publications, name of journal / conference and authors. Research director is responsible for identifying duplicates and resilience across activities. Basically top-rated journals and conferences are affiliated with ACM and IEEE.

# patents granted [R1.5]	Named list of patents worked out and handed in to EPO. Patents are assigned to the Action Line with the main contribution - conflicts are resolved by the R-Dirs and ALLs. Documented by list of patents.
# patents filed [R1.6]	Named list of patents granted by the EPO. Patents are assigned to the Action Line with the main contribution - conflictions are resolved by the R-Dirs and ALLs. Documented by list of patents.
# downloads of EIT ICT Labs originated open source software [R1.7]	Downloads of open source SW packages (prototype and product releases) which can be obtained from the ICT Labs web site or from any partner web site.
# end users integrated in Living Labs [R2.1]	Number of end users who have been engaged in Living Lab experiments. This applies to activities involving individual users, e.g. invited by the entity conducting the event. Usually rather small number compared to R2.2.
# end users integrated in tests and experiments [R2.2]	Number of end users who have been engaged in tests and experiments apart for Living Labs experiments. In contrast to R2.1 this PI applies to experiments which involve a large number of anonymous users (e.g. registering on a web-site on their own account).
# scientific and best paper awards [R2.3]	Any kind of awards by journal or conference committees for outstanding contributions. Documented by a named list of awards, juries, and name and affiliation of laureate. Nobel prizes to be counted separately.
# technical developments [R2.4]	Any kinds of identifiable and documented demonstrators, platforms, tools, components, and services resulting from KIC value added work. This pertains to developments which are not counted by PI R1.2.
# technical / design concepts [R2.5]	Any type of artefact (e.g., requirements specification for components, use case description for SW applications, system / user interface design, business case description for services, business scenario ...) which are the basis for a further development of deliverables of any kind leading to future outputs counted as R2.4 and R1.2. Only of KIC-internal value and not transferred to any external entity.
# process innovations and methodologies [R2.6]	Deliverables which do not require technical development, but provide value add by intellectual cunningness only. This pertains to deliverables not counted by R2.5.
# studies, reports and investigations [R2.7]	Studies and investigations (in contrast to catalyst services) are to gain information about a certain object using a defined methodology and/or tooling to obtain that methodology. The customers of the information obtained may AL-internal or external bodies. (Examples are e.g. reports from innovation radar or benchmarking studies).
# experiments and tests in test beds [R2.8]	Experiments and tests in test beds are used to gain information about the functionality and user acceptance of specific developments (products, services) in order to improve (or disapprove) the concepts or implementations. For any test bed several experiments and test may be conducted.
# interconnected technical components in a testbed or lab (physical computers, servers, network elements, sensors, etc.) [R2.9]	Number of technical components interconnected in a lab or test bed, also in a system of systems across all test beds and living labs per Action Line.
# take-up of technical ideas and developments inside the KIC [R2.10]	Transfer of technical developments (R2.4), concepts (R2.5), or process innovations / methodologies (R2.6) from one EIT ICT Labs activity to another.
PIs related to Business activities	**Definition**
# new companies created by the KIC [B1.1]	New companies founded as outcome of KIC value added activities. Attributes for start-ups: must be a LE - founded by KIC activities - has benefitted from a financial transaction/service provision with the KIC - and has 1st launching customer. A named list of companies list is kept by the B-Dir, E-Dir and the N-dirs to resolve duplicate nominations.

# companies involved in EIT ICT Labs SME partnership programs [B1.2]	Number of SMEs involved in official EIT ICT Labs programs which have signed in a formal agreement with EIT ICT Labs. Criteria to judge status of SME to be determined by program lead.
# technology / knowledge transfer cases to established companies [B1.3]	Cases in which an identifiable technology, a solution, concept, methodology, process etc., resulting as output from EIT ICT Labs value added activities is transferred to a recipient (internal or external of the KIC) who did not have access to it before. Transfer can be accomplished by licensing and/or consultancy projects. Documented by a list with named entities of technologies/solutions and target products/offerings). Tech / knowledge transfers to new ventures covered under B1.1.
# innovations incubated [B1.4]	Cases in which an output of EIT ICT Labs' activities (R1.2, R2.4, R2.5, R2.6) are transferred to address a new business case (a product or service offering) for which this output has not been used before. Documented by a list with named entities of technologies/solutions and target products/offerings).
# new products and services launched into the market [B1.5]	New or significantly improved products and services based on outputs from KIC activities offered commercially to external parties by KIC partners or external companies, or by companies founded by KIC's involvement (B1.1).
€ revenue by new companies [B2.1]	Revenue generated by new companies established as outcome of KIC activities (B1.1) or SME's belonging to EIT ICT Labs SME partnership programs (B1.2) and tracking the revenue these companies achieve. The revenue development is recorded annually per individual company.
€ capitalized value of new companies [B2.2]	Total capitalised value of new companies established as outcome of KIC activities (B1.1) or SME's belonging to EIT ICT Labs SME partnership programs (B1.2).
# jobs created by new companies [B2.3]	Number of jobs created by new companies established as outcome of KIC activities (B1.1) or by SME's belonging to EIT ICT Labs SME partnership progrsms (B1.2). Measured annually per company.
Survival rate of new ventures after n years [B2.4]	Number of companies created as outcome of KIC activities and which are still on the market after n years or have been acquired or merged with other companies which still exist after n year after the new company has been founded. Capturing this PIs makes only sense after n years the company has been founded.
€ 3rd party investments to new companies [B2.5]	Amount of capital invested by third parties to new companies resulting as outcomes from KIC value added activities (B1.1).
€ value added to users [B2.6]	Identifiable value generated to end customers from new products and services based on KIC activities (B1.5) as calculated by the respective business plans (only applicable in certain cases).
Return on investment [B2.7]	Percentage of money returned from businesses at EIT ICT Labs level, i.e. <present value of expected revenues (B2.1)> / <present value of total investment to EIT ICT Labs>. Reported on KIC level only.
# market-driven RTD initiatives launched on the basis of business foresight mapping [B2.8]	Number of initiatives derived from recommendation from foresighting activities (innovation radar, trend reports), launched via top-down strategic reasoning. I.e. initiatives (e.g. new activities, new action lines) triggered by top-down management decision derived from foresighting rather than bottom up proposals. KIC management is responsible for documenting this measure (named list of initiatives).
PIs related to CLC's	**Definition**
# people working daily in CLCs [CLC1.1]	Average number of people that work in a particular node's CLC independent of the duration of the stay during ordinary working days. The figure is measured year-to-date, i.e. from the first day of the reporting period to the day of reporting. On CLC -level, the figure is averaged over the individual KICs' figures. Data can also be elicited by regular samples on the current population of the CLCs.

# visits of mobility between CLCs (geographically, organizational) [CLC1.2]	Number of visits (> 1 week in a CLC by persons either from another node or from an organization (KIC partner or external) not immediately co-located with the CLC.
# visit months of mobility between CLCs (geographically, organizational) [CLC1.3]	Total duration of visits (> 1 week in a CLC by persons either from another node or from an organization (KIC partner or external) not immediately co-located with the CLC.
# days of co-located work home region [CLC2.1]	Guests in the collocation centre which are located in the same area/country like the hosting node.
# days of co-located work foreign region [CLC2.2]	Guests in the collocation centre which are located in a different area/country as the hosting node.
# internal meetings [CLC2.3]	This refers to any assemblies of participants of a certain activity with a rather formal nature (invitation to several people, agenda, minutes of meeting etc.). The purpose and content of the assemblies may vary (e.g. information exchange, training, announcements, seminars etc.). Information exchange is mutual between participants. Participants are invited individually. Documented by announcements on ICT Labs' intranet page.
# participants at internal meetings [CLC2.4]	This refers to the participants in internal meeting (CLC2.3) being affiliated with the ICT Labs or one of the ICT Labs' partners. Data elicited with internal meetings.
# external meetings [CLC2.5]	This refers to any assemblies of participants with a rather formal nature (invitation to several people, agenda, minutes of meeting etc.). The purpose and content of the assemblies may vary (e.g. information exchange, training, announcements, seminars etc.). Participants come also from non-ICT Labs-partners. Information exchange is mutual, i.e. bi-directional. Participants are invited individually.
# participants at external meetings [CLC2.6]	This refers to the participants in external meetings (CLC2.5) grouped to participants from KIC partners and participants from external organizations.
# events and conferences [CLC2.7]	This refers to any assemblies with the goal to inform participants, unidirectional information, like at partner events, roadshows, marketing and visibility events etc. The participants are mainly - but not exclusively - associated with EIT ICT Labs' partner organizations. Usually invitations are being issued to a very large number of people, of which only a portion will attend.
# participants at events and conferences [CLC2.8]	Number of participants in events and conferences (see CLC2.7) - data captured with events and conferences and grouped to participants from KIC partners and participants from external organizations.
# external visibility events hosted by CLCs [CLC2.9]	Number of events fostering the KIC's visibility to external stakeholders conducted in the CLC and announced through various media. Data is kept as a named list by CLC and KIC management.
# participants at external events hosted by CLCs [CLC2.10]	Number of participants in external visibility events according to CLC2.9. Number of participants is maintained in the respective named list.
# recognized contributions to national, regional or (joint) industrial agendas [CLC2.11]	Instances to be counted are distinct EIT ICT Labs branded influences to national, regional or (joint) industrial agendas with respect to research and/or innovation topics. This may include any topics concerning strategic and/or research topics. Data is collected by KIC management in a named list including a short description of influenced topics.
# partners involved [CLC2.12]	Number of ICT Labs partners (core and associate) actively contributing to achieve the goals of an activity.
PIs related to whole KIC	**Definition**
Brand recognition [KIC1.1]	Specific metric by the marcom team according to a yearly survey.
# strategic alliances entered into by the KIC [KIC2.1]	Number of strategic alliances entered into by the KIC with other European or overseas entities for the purposes of fostering co-operation towards the goals of EIT ICT Labs. The scope of an alliance is generally wide (more than a single activity) and is intended to cover an extended period of time.

# carrier project proposals [KIC2.2]	Proposals prepared in association with EIT ICT Labs value added activities by KIC partners (and possibly external partners), specifically intended to become carriers if accepted, and labelled before submission with the EIT ICT Labs brand by decision of the Management Committee. Refers only to actually submitted and eligible project proposals including participants, project plan, funding plan, etc.
# public disclosures [KIC2.3]	Information is provided to the public (by web-pages, flyers etc.) in a unsolicited manner without any formal evaluation process. These publications may have technical and non-technical content (e.g. marketing articles) depending on the reporting entity.