

Written by ENoLL and ENoLL members
main editors: Ana García Robles, Tuija Hirvikoski,
Dimitri Schuurman, Lorna Stokes



Introducing ENoLL and its Living Lab community

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**Written by ENoLL
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The core team leading the production of this publication included Ana García Robles (ENoLL), Tuija Hirvikoski (Laurea University, ENoLL President), Dimitri Schuurman (iMinds) and Lorna Stokes (ENoLL).

Ana García Robles (ENoLL), Tuija Hirvikoski (Laurea University, ENoLL President), and Dimitri Schuurman (iMinds) led the content production and they are main contributors to the content.

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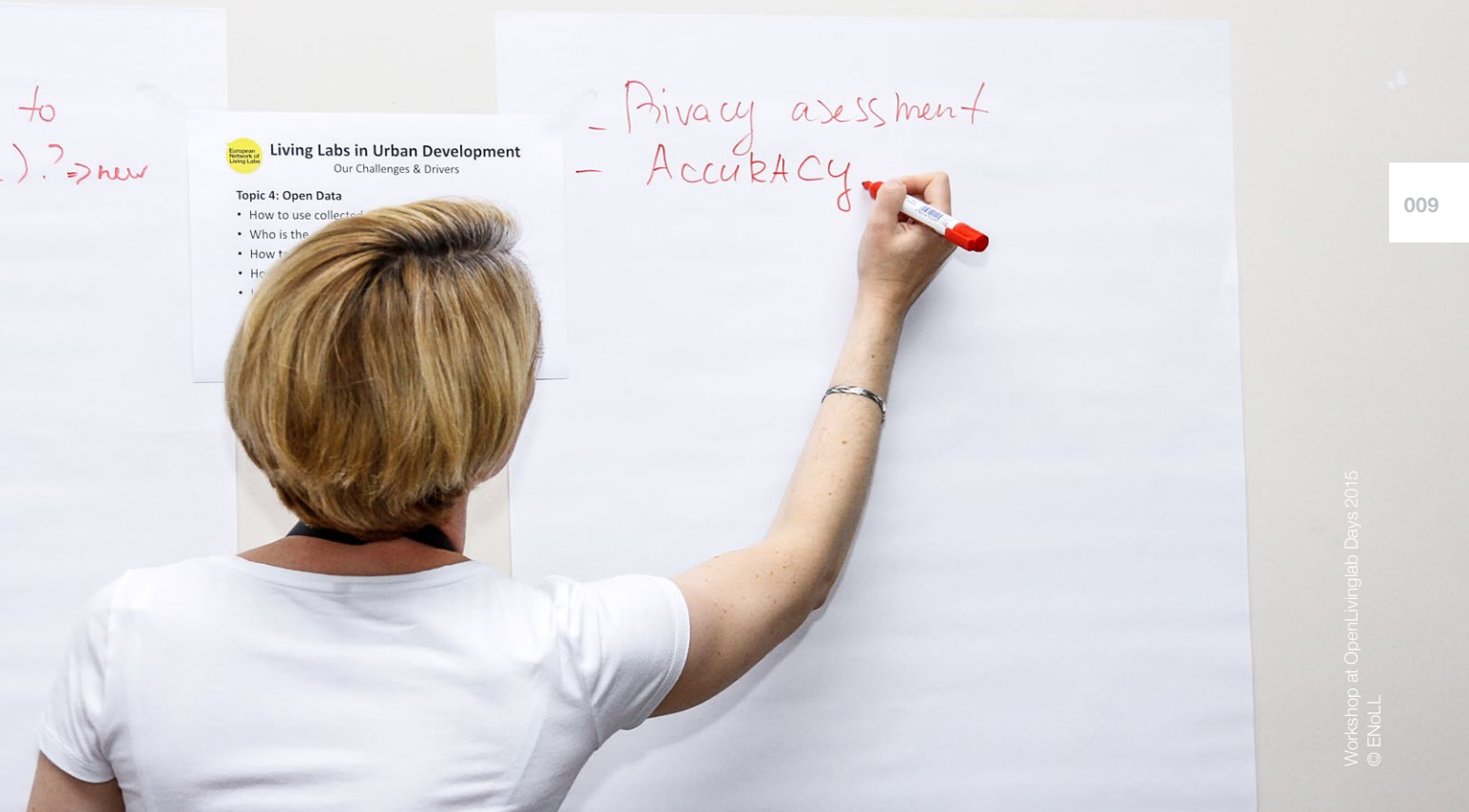
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about this publication

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This booklet is intended as an introduction and overview of the living lab phenomena and the international living lab network (ENoLL or European Network of Living Labs). The content has been developed as a compilation of existing research material and documentation, a reflection of the history and supporting policies, a snapshot of the current situation, and also the vision, opportunities and challenges towards the future. It is a live document and it will have regular updates and contributions.

This booklet is part of the communication materials of the ENoLL Association, targeting a wide but still very specialised



audience. We expect the content of this booklet to be useful and informative for any person, professional and institution (public or private) interested in open and user innovation, innovation management, innovation policies, and social and territorial innovation.

Almost 10 years since the launch of the network, this booklet offers some information on the history of European living labs, the policy context, research on living labs, and reflects on definitions and models. It also describes the principles, resources, values and provides many tangible examples and concrete information from leading living labs across the world,

data and statistics of the ENoLL network. Benefits and challenges are also described as strong foundations for the vision and future of living labs supported by the ENoLL association and the ENoLL office.

The booklet also includes the whole list of historically labelled Living Labs and the list of active members, which was approved by the ENoLL General Assembly in August 2015

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executive summary: Living Labs and ENoLL

Living Labs refer to user-centred, open innovation ecosystems based on a systematic user co-creation approach integrating research and innovation processes in real life communities and settings. In practice, living labs place the citizen at the centre of innovation and have thus shown an ability to better mould the opportunities offered by new ICT concepts and solutions to specific needs and aspirations of local contexts, cultures, and creative potentials

Nowadays, the involvement of users in the innovation process is not a new concept. User and open innovation have

been progressively integrated into research and innovation policies, and many organisations worldwide claim to have knowledge in different methods, tools and expertise in user experience and user engagement techniques. Living labs, pioneers in this field years back, have evolved to also become innovation orchestrators and matchmakers of different stakeholders at a city and regional level, and mature living labs have created permanent structures for quadruple helix implementation.

Living labs are both practice-driven organisations that facilitate and foster open, collaborative innovation, as well as real-life environments or arenas where both open innovation and user innovation processes, can be studied and subject to experiments, and where new solutions are developed. This unique capability enables living labs to generate concrete,

tangible innovations based on user and community contributions, and at the same time to advance (academic) understanding of open and user innovation principles and processes.

The European Network of Living Labs (ENoLL) is a global network of open innovation ecosystems (Living Labs) that places people at the centre of product and service development and innovation. The network and its members provide innovation services for small and medium-sized international companies, the public sector, organisations and citizens. ENoLL promotes the development of business and industry and the creation of tax revenue and jobs.

ENoLL has recognised nearly 400 living labs from around the world maintained by municipalities, universities, regions




and companies acting also as the development and piloting partners. Of these, 170 make up the core for piloting European industry and innovation policy and are involved in in-depth cooperation with regions and the European Commission's Directorates-General.

The ENoLL network aims at creating pan-European experiments and prototypes for new markets, based on the Digital Single Market. It is an open engagement platform where new business models can be experimented with and developed all based on a quadruple helix approach, creating safety nets for experiments and prototypes with new roles of the public sector as enabler and catalyser. ENoLL can combine European vertical specialisation domains (health, smart cities, creativity, education etc.) with horizontal and territorial specialisation.

The ENoLL international non-profit association, as the legal representative entity of the network, was founded in 2010 and is headquartered in Brussels, at the heart of Europe. ENoLL supports the evolution and the uptake of the Living Lab paradigm throughout Europe and worldwide, contributes to the creation of a dynamic, multi-layer and multidimensional European Innovation Ecosystem, and facilitates the cooperation and the exploitation of synergies between its members and external stakeholders.

Since its inception in 2006, the ENoLL network has expanded and developed into a vibrant and lively community of member living lab organisations that operate by the main living lab principles such as multi-stakeholder co-creation, active user involvement and real-life intervention. Although this was followed by a first wave of (mostly Scandinavian) academic



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Workshop at OpenLivingLab Days 2015
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living lab publications (e.g. Eriksson et al., 2005; Niitamo et al., 2006 & Ståhlbröst, 2008), the community can be characterised as largely practice-based.

Recently the field of academic research into living labs has also blossomed. Two new PhD's in the field of living labs (Schuurman, 2015 & Leminen, 2015) illustrate this evolution, as well as dedicated tracks at internationally acclaimed conferences such as ISPIM, critically acclaimed special issues in TIM Review and INFO, and the growing number of high quality papers presented at the OpenLivingLab Days Conference.

The living lab approach offers benefits to companies, users, developers, public financiers and from a territorial perspective living labs can help European Regions identify and valorise

their respective economic niches and competitive advantages in the perspective of Smart Specialisation.

¹E.g. the Coventry Fab Lab where citizens, entrepreneurs, researchers and policy makers come together to create solutions to enhance the Coventry city life.

²E.g. in the neoScores project from iMinds Living Labs musicians were actively involved in the development of a tablet application for reading and annotating digital sheet music scores.

³E.g. the APOLLON project with a.o. Botnia Living Lab, which included pilots in different countries with innovations in development which enabled real-life testing in different cultural contexts.

Short history of living labs. Research and policy context.

When looking back through the European history of ICT innovation and user involvement, three main predecessors can be discovered that carry the roots of the current living labs movement: the Scandinavian cooperative and participatory design movement from the 1960s and 70s, the European social experiments with IT in the 1980s, and the Digital City projects from the 1990s.

ICT innovation and user involvement in Europe

The tradition of cooperative and participatory design can be traced back to the 1960s and 70s, when research projects on user participation in systems development took place all over Scandinavia. These early initiatives were supported by trade unions and involved workers in the design of IT applications in the workplace. Next to the active user involvement, this cooperative design also introduced the facilitation of trial use situations as part of the design process, so as to stage users' hands-on experience with future applications, which puts the focus on the real-life context. Because IT later became prevalent not only at work but also at home, in school and even while "on the move", cooperative design has struggled somewhat to embrace the fact that much technological development no longer happens as design of isolated systems in well-defined communities of

work. As a result, the so-called user-centred design-approach (UCD) came to the fore. This design methodology looks at the design of a product or service as a process in which the needs, wants and limitations of users are given extensive attention at each stage of the design process, including testing in field studies. UCD and participatory design are still widely used within a lot of the (Scandinavian) living lab organisations. Commonly methods include ethnographic studies, contextual inquiry, prototype testing, usability testing and generative methods.

A second line of proto-living labs started in the 1980s when, all over Europe, various social experiments with IT were started. Social experiments originated in the field of psychology and refer to experiments taking place outside of laboratories and therefore with less physical isolation of subjects and materials, less procedural standardisation and longer-lasting treatments when compared to experiments in laboratory settings. Driven hard by the European Commission and the FAST-programme, researchers started to use social experiments as a test and implementation methodology in the context of the developing field of ICT in the 1980s. Some examples of European social experiments with ICT include field trials with Interactive Videotex (France, Germany, the UK and Denmark), Broadband Cable and Computer Conference Systems and the implementation of so-called telecentres for rural ICT-development in various European countries.

During the 1990s, the digital city concept took hold in Europe and elsewhere, referring to a number of digital initiatives

undertaken by cities, especially related to digital representations of the city, digitally related economic development and urban regeneration initiatives and the provision of Internet access for citizens. Digital city initiatives can be seen as the counterpart of the telecentres that were set up for social experiments, which were initially aimed at underprivileged, rural and remote areas. The early focus in the 1990s on digital city network infrastructure and the platforms used to enable access to increasingly large amounts of digital information were of central importance within the digital city-discourse but this led the concept to carry a connotation of being over technology-deterministic. Some examples of these early digital city-initiatives could be found in the UK (the Manchester Host network founded in 1991), in the Netherlands (Digital City Amsterdam, founded in 1994) and in Finland (Virtual Helsinki, founded in 1996). Also, in the USA, AOL started a regional information service called “digital city” for several tens of major US cities, while, in Japan, the Digital City Kyoto Project was launched in 1998 to create a “social information infrastructure towards the 21st century”. A number of founding members of ENoLL were also involved, as members of the Eurocities network, in setting up the first European urban telematics network, Telecities, in 1993, which is now the Eurocities Knowledge Society Forum (KSF).

Current smart city initiatives, which also have strong links with various living lab organisations, can be seen not only as extensions of the large-scale technology infrastructure and platform initiatives, now also encompassing mobile technologies and the so-called Internet of things, but also

attempts to strengthen cooperative and participatory approaches, both present in the original digital city concept. The digital city initiatives were, more than the previous two predecessors, explicitly multi-stakeholder, as they connect citizens (users), policymakers (public organisations) and private organisations (businesses) on a large scale. Thematically, the initiatives covered a broad range, albeit always with a link to city life. In terms of user involvement, the user was seen as a potentially innovative agent, with the technical infrastructure as a trigger for this creativity.

From home labs to living labs

While there had been “accidental mentions” of the term living lab before, the actual birth of the concept is ascribed to MIT’s Prof William (Bill) Mitchell, who used it to refer to a purpose-built lab where the routine activities and interactions of everyday home life can be observed, recorded for later analysis and experimentally manipulated, and where volunteer research participants individually live in, treating it as a temporary home. These labs had an initial focus on testing and adapting new technologies based on their fit with the daily home environment. In the MIT PlaceLab, a 1,000-square foot “living laboratory”, with all facilities of a regular home, users are observed, logged and tracked with all sorts of devices, allowing to record their habits, activities and routines. Strong importance is placed on the technical infrastructure allowing the data gathering.

Living labs as well as related user driven innovation projects

appeared in Europe in the first years of the 2000s. A number of the cities that had founded Telecities, including Barcelona, Helsinki and Manchester, were involved in a TEN-Telecom project called “InfoCities” (1996-99) and then a large scale Sixth Framework Programme (FP6) project called “Intelligent Cities – Intelcities” (2002-05). Prof. Bill Mitchell was part of the Expert Advisory Group for the Intelcities project and this helped to spread awareness and knowledge of his work at MIT. At the end of the Intelcities project the participating cities agreed to establish a European network dedicated to knowledge exchange on living labs which then went on to become the basis of the first wave of the European Network of Living Labs (as detailed below).

It became clear that the living lab notion that was to be predominant in Europe, which built upon the earlier experiences with participatory design, social experiments and digital cities from the 1960s up until the 1990s, offered a fundamental reinterpretation of the US-originated home labs. A major divergence was that users were to be studied or involved in their everyday habitat instead of recreating a natural context in a laboratory setting.

It can be argued that the European understanding of living labs as a set of methods and a milieu for leveraging user-technology reactions and interactions in the innovation process combined five basic elements that reflect a number of aims and characteristics of both the home labs and the living lab predecessors.

Short history of living labs.

Research and Policy context

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These elements are active user involvement (i.e. empowering end users to thoroughly impact the innovation process); real-life setting (i.e. testing and experimenting with new artefacts “in the wild”); multi-stakeholder participation (i.e. the involvement of technology providers, service providers, relevant institutional actors, professional or residential end users); a multi-method approach (i.e. the combination of methods and tools originating from a.o. ethnography, psychology, sociology, strategic management, engineering); and co-creation (i.e. iterations of design cycles with different sets of stakeholders).

This combination of elements from previous experiences is summarised in Table I. For each predecessor we indicate whether this characteristic was already clearly present (+), somewhat present (+/-), or not present at all (-).

	cooperative design 1970's	social experiments 1980's	digital cities 1990's	home labs 2000's
active user involvement	+	+/-	-	-
real-life setting	+	+	+/-	+/-
multi-stakeholder	+/-	+	+	-
multi-method approach	+/-	+	-	+/-
co-creation	+	+/-	-	-

aims and characteristics of living lab predecessors



In 2006, the European living lab movement gained further momentum through a set of European Union (EU) policy measures, including the funding of “Corelabs” and “Clocks”, two projects aimed at promoting and coordinating a common European innovation system for ICTs based on living labs and at hosting and promoting the establishment of the European Network of Living Labs (ENoLL). This initially consisted of 19 living labs located across the EU, most of which were partners in the Intelcities project (see above).

Research on living labs

Research on living labs has been mostly focused on conceptualising and describing different approaches and methodologies. However, based on the current literature, we can discern four main theoretical cornerstones for living lab sense making. The first one is von Hippel's (1988) work on user (-driven) innovation because of its emphasis on the ability of so-called lead users, rather than manufacturers, to create (mainly ICT) innovations. This resonates with the ‘active user involvement’ principle of living labs. A second cornerstone is Silverstone's (1993) theory on the domestication of ICTs that frames technology adoption as an on-going struggle between users and technology where the user attempts to take control of the technological artefact and the technology comes to be fitted to users' daily routines. This relates to the real-life environment. It has been said that, in living labs, von Hippel's concept of user-driven design and Silverstone's insights into the appropriation of technologies are coupled dynamically through real-life experimentation (Frissen and Van Lieshout, 2006). A third cornerstone was already mentioned in the historical overview: the participatory design and user-centred design (UCD) traditions. Participatory design sees users as

central actors in system development activities (active co-creators), whereas in UCD users are regarded as central factors (passive co-creators) that influence the design within a multi-stage problem solving process that not only requires designers to analyse and foresee how users are likely to use a product, but also to test the validity of their assumptions with regard to user behaviour in real world tests with actual users. The three key principles of UCD are an early focus on users and tasks, an empirical measurement of product usage in field trials, and iterative design (Gould & Lewis, 1985). A fourth cornerstone is the literature on open innovation and business model innovation, which argues that today's fast-paced innovation landscape requires collaboration between multiple business and institutional stakeholders, and that the business should use these joint innovation endeavours to find the right “business architecture” (Chesbrough, 2003; Mitchell and Coles, 2003). These four theoretical cornerstones also relate to the three perspectives on user involvement as identified by Greenbaum (1993):

- The ethical or democratic perspective, which regards user involvement in innovation as a moral right to influence technological decisions affecting their private and professional life
- The economic or pragmatic perspective, which sees user involvement as a way to enhance system acceptance, commitment and buy-in, and has a focus on getting the job done better
- The curiosity or theoretical perspective, which focuses on learning about cooperation, collaboration and communication by studying user involvement. The focus is on gains for all key stakeholders and this perspective is also able to unite the ethical and economic perspective

Whereas the early living lab initiatives had a clear focus on democratic perspectives (participatory design), later living labs also embodied more economic and theoretical perspectives. However, as will appear from the wide variety of living lab organisations and projects presented within this booklet, all three perspectives can be linked to living lab activities and are able to coexist and reinforce each other, as living labs offer a democratic force to end-users and citizens involved in innovation projects, but also enhance innovation efforts by private actors, which leads to a better understanding of collaborative innovation in the long run.

Policy context

The Finnish Presidency launched the European Network of Living Labs on the 20th of November 2006 as a first step towards a new European Innovation System based on co-creation of innovation in public, private and civic partnership. It was an urgent measure to improve European-wide aspiration for innovation towards job creation and growth and a concrete action and example of real-life implementation of the Lisbon Strategy.

ENoLL's story began earlier in 2006 with Nokia's Veli-Pekka Niitamo as one of the initiators and driving forces for the living lab movement. At that time, open, user-oriented innovation principles were implemented more effectively in the EU's competitiveness and innovation policy and DG Information

Society and Media's experts Bror Salmelin and Olavi Luotonen played a key role in creating the preconditions for the realisation and development of the policy in cooperation with companies, cities and regions. Now ten years on, Carlos Moedas, the Commissioner responsible for Research, Science and Innovation at the European Commission emphasises the importance of open innovation and open science and the foresight Report to the European Commission "Knowledge Future: Intelligent policy choices for Europe 2050" Flexibility and experimentation in innovation, Build stronger regional innovation ecosystems, Stimulate experimentation in the economy and society, Promote experimentation in social and environmental policy and policy recommendations for an European success.

From this we can determine that the work done in living lab communities have had a significant impact on European innovation policy, which is shifting further from linear research and innovation activities to open innovation.

Living labs offered a research and innovation platform over different social and cultural systems, cross-regionally and cross-nationally. The European Network of Living Labs is large-scale experimentation platforms for new services, business and technology, and market and industry creation within ICT.

That new approach to research for innovation was a huge challenge for research methodologies, innovation process

management, public-private partnership models, IPR's, open source practices and the development of new leadership, governance and financial instruments. For this reason the European Commission (Information Society and Media Directorate, New Collaborative Working Environments unit) allocated 40 Million Euros from the 5th call of the 6th Framework Programme for piloting a European Network of Living Labs. The project portfolio included 12 living lab sites in Europe, China, India and Brazil.

The European living lab movement gained momentum through this set of European Union (EU) policy measures, including the funding of "Corelabs" and "Clocks", two projects aimed at promoting and coordinating a common European innovation system for ICTs based on living labs and at hosting and promoting the establishment of ENoLL.

After that a number of strategic policy documents have highlighted the relevance of human and social aspects for better design and implementation of Research, Development and Innovation (RDI) projects.

The Green Paper on RDI policy reform recommended that all future programmes "should provide more [European] added value, increase [their] leverage effect on other public and private resources and be used more effectively to support the strategic alignment and pooling of national and regional funds, to avoid duplication and [fragmentation]". The flagship initiative Innovation Union invited Member States to overcome

traditionally "compartmentalised approaches" between research and innovation financing, setting a narrower focus on the outcomes to be achieved by meeting the two ends of the RDI value chain, possibly in relation to grand societal challenges and to clearly stated policy objectives.

Thus, the rationale of EU sponsored public intervention in this domain merges the aspiration to push the technology frontier ahead to improve community life with the pragmatic requirement of translating RDI results into new products and services that meet market expectations and ultimately lead to the creation of "more and better jobs". Not only have these recommendations shaped the research agenda of Horizon 2020, but also inspired the provisions for RDI within Cohesion Policy and Territorial Cooperation Programmes for 2014-2020, particularly through the Smart Specialisation Strategies now defined for all EU Regions and Member States, most of which also providing the implementation framework for the EU Digital Agenda at local level.

Additionally, living labs provide new opportunities to enable a bottom-up policy coherence to be reached, starting from the needs and aspirations of local and regional stakeholders, creating a bridge between European policy and programmes, including Horizon 2020, Smart Specialisation, the Urban Agenda, Cohesion Policy, and so forth. This is particularly apparent in developing policy and practice around the concept of 'smart cities' where strategic initiatives supported by the FP7/ICT Future Internet Experiment Facility and Experimentally



Innovation visits in Istanbul at OpenLivinglab Days 2015
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driven Research (coordination and support actions) and the CIP ICT-PSP (open innovation, user experience and living labs theme / Smart City and open innovation/Smart city portfolio) supported and contributed to the development of multiple cross-border experiments with Living Labs mainly in the urban context. This enabled not only new approaches by living labs in terms of knowledge exchange and collaborative networking, for example through the APOLLON (Advanced Pilots of Living Labs Operating in Networks) project , but also more strategic policy focused approaches to be formulated, such as the Smart Cities Roadmap and White Paper developed as a result of the FIREBALL (Future Internet Research and Experimentation By Adopting Living Labs) project . This in turn was a key catalyst in the launch of the Connected Smart Cities Network by ENoLL working in partnership with other networks, including Eurocities, in November 2010 which is still operating today as the Open and Agile Smart Cities Initiative.

Multiple examples of living lab initiatives can be found in the CIP ICT PSP Smart City portfolio [9]. Knowledge and results from those projects (e.g. CitySDK, Commons4EU, SmartIP, EPIC, OpenCities, Specifi, My Neighbourhood, etc.).

Horizon 2020 (H2020) the biggest EU Research and Innovation programme ever with nearly €80 billion of funding available over 7 years (2014 to 2020) , widely incorporates user involvement, open innovation and real-life experimentation and piloting with users and citizens involvement, through different programme sections and in particular in tackling of societal challenges, industrial leadership, Science with and for Society, cross-cutting activities and Fast track to innovation. Specific calls in different sections of the H2020 work programme directly recommend Living Labs as innovation and experimentation instrument in particular in areas related to smart cities, urban innovation, mobility and international cooperation. H2020 work programme 2016-2017 secured over 55M Euros for co-creation calls to focus on co-creation for growth and inclusion, engaging citizens, users, academia, social partners, public authorities, businesses including SMEs, creative sectors and social entrepreneurs in processes that span from identifying problems to delivering solutions. The potential for societal and innovative development through co-creation in all sectors of society is widely recognised and the current socio-economic context, despite many difficulties, provides for manifold opportunities to fully exploit it.

Short history of Living Labs.

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⁴ http://www.eurocities.eu/eurocities/about_us/history

⁵ <http://intelcities.it/gr/intelcities>

⁶ E.g. the USEMP project with a.o. Botnia Living Lab where end-users are empowered to control their own (digital) data and encouraged to reflect upon their digital social footprint.

⁷ E.g. Espaitec scientific, technological and business park which functions as an entrepreneurial hub and incubator.

⁸ E.g. the Guadalinfo Living Lab network which provides IT infrastructure to citizens in order to foster digital skills and at the same time gather data and get insights regarding digital competences, IT collaboration opportunities and social innovation.

⁹ E.g. Haaga-Helia's projects that include Helsinki Living Lab that developed Living Lab methodologies, Pasila Living Lab that enabled citizens to be involved in the policy making of their city, and 'Finnish Hotel of Tomorrow' that fostered concrete innovations in the touristic domain.

¹⁰ <https://ec.europa.eu/digital-agenda/en/news/launch-european-network-living-labs-co-creation-innovation-public-private-and-civic-partnership>

¹¹ https://ec.europa.eu/research/foresight/pdf/knowledge_future_2050.pdf

¹² <http://www.apollon-pilot.eu/>

¹³ <http://cordis.europa.eu/fp7/ict/fire/connected-smart-cities/factsheets/fireball-sep12.pdf>

¹⁴ <http://www.oascities.org/>

¹⁵ <https://ec.europa.eu/programmes/horizon2020/en/what-horizon-2020>

¹⁶ <http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/calls/h2020-sc6-co-creation-2016-2017.html#c,topics=callIdentifier/t/H2020-SC6-CO-CREATION-2016-2017/1/1/1&callStatus/t/Forthcoming/1/1/0&callStatus/t/Open/1/1/0&callStatus/t/Closed/1/1/0&+identifier/desc>

definitions and models. principles and values

A lot of different definitions have been proposed for what a living lab is, something that can be explained in more detail in the practice-oriented character of living labs. Within this publication, we mainly refer to the work of Leminen on actor roles in living labs (2011), Schuurman on the different levels of analysis within living labs (2015) and Ståhlbröst on the main principles that are reflected within living lab activities (2008). Leminen (Westerlund & Leminen, 2011) defines living labs as: “physical regions or virtual realities, or interaction spaces, in which stakeholders form public-private-people partnerships (4Ps) of companies, public agencies, universities, users, and other stakeholders, all collaborating for creation, prototyping, validating, and testing of new technologies, services, products, and systems in real-life contexts”. This definition is complemented by Schuurman (2015) who sees living labs as an organised approach (as opposed to an ad hoc approach) to innovation consisting of real-life experimentation and active user involvement by means of different methods involving multiple stakeholders, as is implied in the Public-Private-People character of living labs. Ståhlbröst (2008) also acknowledges this point of view by referring to living labs as both an environment and as an approach. Leminen identified multiple perspectives within living labs literature that have been used to describe and make sense of living lab practices.

Three-layer model for living labs

Schuurman proposes to make a distinction between three different levels of analysis within living lab phenomena, as living labs are complex entities with various activities and interactions taking place between different actors. This model for living labs is based on a practical and theoretical assessment of different living labs and helps to define more precisely to what activities or phenomena one is referring to.

The three layers that can be distinguished are the following: a macro level (the Living Lab constellation), the meso level (consisting of a Living Lab innovation project) and the micro level (consisting of the different methodological research steps).

level	definition	research paradigm
<i>macro</i>	Living Lab constellation consisting of organized stakeholders (PPP-partnership)	Open Innovation: knowledge transfers between organizations
<i>meso</i>	Living Lab innovation project with Living Lab methodology	Open & User Innovation: real-life experimentation, active user involvement, multi-method and multi-stakeholder
<i>micro</i>	individual research steps and activities, linked to the stakeholders' assets and capabilities	User Innovation: user involvement & contribution for innovation



Former and new
Presidents Jarmo
Eskelinen (FVH) and
Tuija Hlrvikoski (Laurea).
August 2015. @ENoLL

On the macro level, a living lab is a set of actors and stakeholders that are organised to enable and foster innovation, typically in a certain domain or area, often also with a territorial link or focus. The different organisations listed in this booklet are all living lab organisations at this macro level.

The various assets and capabilities manifest themselves at the micro level, which consist of the different research steps and activities that are carried out within the living lab projects. The specific methods and tools that are listed by the living labs within this booklet can be regarded as elements within this micro level.

The different projects that are carried out within these living lab organisations by means of their methodological toolbox are regarded as the meso level. These projects are aimed at generating and advancing specific innovations or relevant knowledge that enables innovation. The different projects that are listed by the living labs within this publication belong to this meso level.

Most living lab constellations have their own project methodology, which is linked to the assets and capabilities of the living lab actors that manifest themselves at the micro level, e.g. the FormIT methodology developed within Botnia Living Lab (Ståhlbröst & Bergvall-Kåreborn, 2008).

Driving Actors shaping living labs

Regarding the different actors active within living labs, Leminen (2011) distinguishes between providers, enablers, utilisers and users. Providers provide the other actors in the living lab organisation or project with their product or service

portfolio. They take care of the (material) infrastructure used for the living lab operations. Providers are mainly private companies that enter into living labs to co-develop new products, services, and solutions to their own business or industry needs, and focus more on long term results. They attain these goals through their involvement in general living lab operations and (possibly) in the living lab cases, driven by utilisers. Enablers can be various public sector actors, non-governmental organisations, or financiers, such as towns, municipalities, or development organisations. This actor provides (financial) resources or policy support in order to start-up and maintain the living lab operations. They enable the sustainability of the living lab organisation and/or setting-up living lab projects. Utilisers are 'users' of the living lab organisation who aim to develop their businesses. Their focus is on developing and testing new products and services. These utilisers use living labs as a strategic tool to collect data on test-users of their products or services and collaborate with other stakeholders in the living lab ecosystem. These actors drive short-term living lab projects and can be regarded as short-term, ad hoc 'consumers of the living lab'. They do this in living lab projects. Users are the 'end-users' that are being involved in the living lab-operations and in the (short-term) living lab-cases. In some living labs, existing user groups or user communities are involved, while in others the living lab -operations themselves facilitate the formation of a (living lab) user community.

Depending on the actor that drives the living lab organisation, and the focus of the activities, this leads to different 'types' of living labs, such as (1) research Living Labs focusing on performing research on different aspects of the innovation process, (2) corporate Living Labs that focus on having a physical place where they invite other stakeholder (e.g. citizens) to co-create innovations with them, (3) organisational



Workshop at
OpenLivinglab Days
2015 © ENoLL

Living Lab where the members of an organisation co-creatively develop innovations, and (4) intermediary Living Labs in which different partners are invited to collaboratively innovate in a neutral arena. Due to the constant development of the concept other types of living labs certainly exist.

Living lab principles, components and values

As part of setting up ENoLL and based on work (research) in the CoreLabs and Clock projects, both key components and key principles for living labs were established. The foundation of the ENoLL living labs was based on those five Key principles (Ståhlbröst, 2012):

- **Value:** Living lab processes should support value creation in preferably two different ways: for their partners in terms of business value and for the presumptive customer, or user, of the developed innovation in terms of user or societal value.
- **Influence:** Viewing users as active, competent partners and domain experts are vital since their involvement and influence in innovation processes is essential. To motivate participation and engagement among users, it is important to illustrate the impact of the interaction with the users has on the innovation.
- **Realism:** One of the cornerstones of living labs is activities should be carried out in a realistic, natural, real-life setting. This is important since people cannot experience anything independent of the experience they get from being embodied in the world.
- **Sustainability:** Living labs is defined as an approach that meets the need of the present without compromising the ability for future generations from an economic, social and ecological perspective. It is also one cornerstone for the continuous learning cycle within the living labs.
- **Openness:** This principle stresses the importance of having an innovation process that supports a bidirectional flow

of knowledge and resources between stakeholders (Chesbrough, 2011). The idea is that multiple perspectives bring power to the development process and contribute to the achievement of rapid progress. However, to be able to cooperate and share in a multi-stakeholder milieu, different levels of openness between stakeholders seem to be a requirement.

The defined Key Components for a living lab were ICT and Infrastructure, Management, Partners and Users, Research and Approach.

The ICT & Infrastructure component outlines the role that new and existing ICT technology can play to facilitate new ways of cooperating and co-creating new innovations among stakeholders. Management represent the ownership, organisation, and policy aspects of a living lab. The living lab Partners & Users bring their own specific wealth of knowledge and expertise to the collective, helping to achieve boundary spanning knowledge transfer. Research symbolises the collective learning and reflection that take place in the living lab, and should result in contributions to both theory and practice. Technological research partners can also provide direct access to research that can benefit the outcome of a technological innovation.

Both the key principles and key components described above were adopted and implemented in the ENoLL evaluation process to accept new members and they still remain valid today with 395 living labs worldwide assessed under these criteria and a 10th wave under way (closing in 2016).

Maturity of Innovation

Another important variable within living lab is the maturity of the innovation. This relates to the meso and micro level of living labs, as this has implications for the way in which

a living lab project is conceived and what different methodological steps and activities are carried out. We discerned between the following stages, based on Jespersen (2008): idea (the innovation is still an idea and does not exist in any material form yet) – concept (the innovation idea has developed into an innovation concept that explains how the innovation will function) – prototype (the innovation has materialised in some kind of prototype which demonstrates the basic functionalities) – pre-launch (the innovation has been developed in the form of a Minimum Viable Product, but has not been launched on the market) – launch (the innovation is launched in the market) – post-launch (the innovation is already on the market). In the early stages (until concept stage) the focus of living lab projects and activities is mostly on exploration, whereas from prototype stage on, a more experimental approach can be taken. Once an MVP (minimum viable product) is developed, the living lab activities are tailored towards evaluation.

¹⁷ E.g. the Service Logic Business Model Canvas and the People Value Canvas, tools developed by the Laurea Living Labs Network.

¹⁸ E.g. the different companies within the Lighting Living Lab that provide different technologies and prototypes in the domain of light and energy.

¹⁹ E.g. the Province of Trento is an enabler within TASLAB as it supports the Living Lab organisation financially and by promoting the activities.

²⁰ E.g. within iMinds Living Labs a specific SME programme has been developed where SMEs can test and co-create their innovations. These SMEs are utilisers of the Living Lab.

²¹ E.g. the Bird Living Lab which deals with various aspects related to research in the area of birds.

²² E.g. the Lighting Living Lab.

²³ E.g. the Sportis Living Lab.

²⁴ E.g. the Bristol Living Lab.

benefits and challenges

The living lab approach offers benefits to companies, users, developers, and public financiers. In living labs, the goal is to co-create value for all stakeholders by having processes that emphasise this approach

A company benefits through cost-efficient access to end-user data and user experiences. They also save money by being able to make changes to a product much earlier in the development process based on user feedback. Over the long-term, living lab activities also tie customers to a company and its activities.

Users gain opportunities to influence the development of products. They also benefit from the solutions that are developed, which in many cases are solving problems that affect their everyday lives and which may have been otherwise unsolvable. Users also may perceive the new, user-driven products to be more functional because of the co-creative development process.

Living labs also contribute to the core activities of developers; living labs bring opportunities and resources, and the developers bring their capabilities to develop real-world solutions to the users' problems. And, finally, public financiers benefit from activities and outcomes that support their objectives.

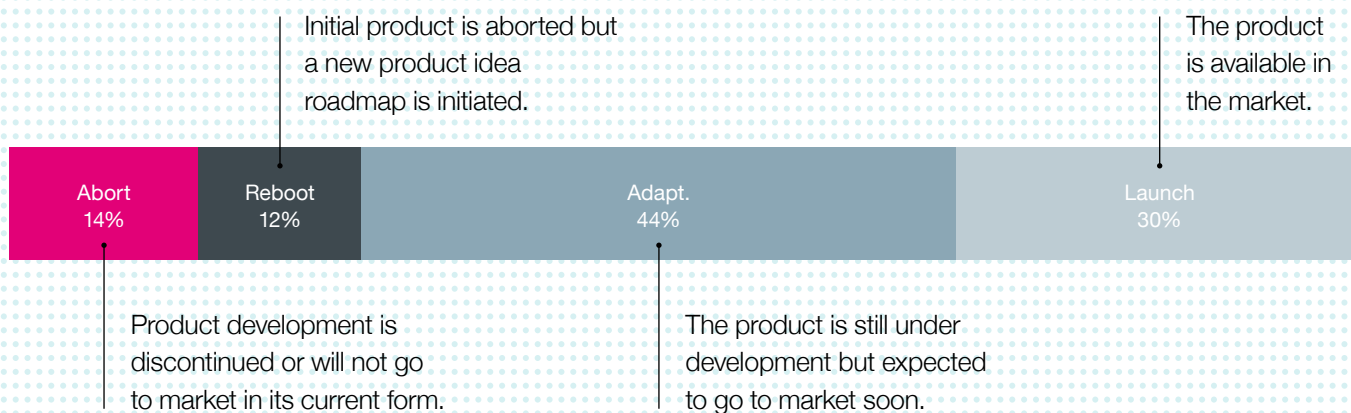
In addition to the benefits to participants, living labs also provide advantages over other types of innovation activities. From a territorial perspective, living lab can help European regions identify and valorise their respective economic niches and competitive advantages in the perspective of Smart Specialisation. The common PPPP (Quadruple helix)

governance model adopted allows opening up local innovation systems to new actors such as urban planners and designers, technology SMEs selling in global markets, creative people, digital artists, and a myriad of grassroots communities. This fits very well into the entrepreneurial discovery and related variety principles, two of the basic tenets of Smart Specialisation Strategy.

Living labs can be instrumental to the integration of RDI with territorial development policy, assuming three possible configurations (which depend on the structure of the underlying innovation system):

- As vertical tools for promoting user-driven RDI in a given sector (e.g. eHealth, Mobility, eGovernment, Cultural Heritage or eInclusion), thus attracting investments and talents (or simply tourists) into a city or region and contributing to the implementation of smart specialisation in the territory;
- As 'orchestration' agents between individual users, citizens, grassroots communities (bottom-up) and the other 4P stakeholders. Therefore, playing a "more encompassing and systemic role" in structuring and providing meaning to user engagement and citizen empowerment in RDI processes within the broader context of territorial innovation policy;
- As territorial innovation or "Smart Regional" models, including guidelines for a proactive behaviour of public administration, grounded on a successful mixture of technological, social and organisational RDI activities, to valorise local intellectual capital and increase knowledge for development.

Living lab insights have been used to



Recently, iMinds Living Labs contracted IDEACONSULT, an independent research organisation to conduct an impact study on its living lab approach for SMEs, measuring both qualitative as socio-economic effects of iMinds' Living Lab tracks for companies. Overall, the results of the study showed that the majority of companies adapted their products prior to market launch based on Insights generated by living lab activities.

Results: economic effects

Sample of 14 companies with ca. 358 K euro project cost:
Living Labs verified to contribute to

- € 3.8 mio investment by participating companies of which € 0.5 mio realised - € 3.4 mio still expected (88%)
- € 14.2 mio investment in employment: 203 Person-years of which € 2.6 mio realised - € 11.6 mio still expected (81%)
- € 13.1 mio revenue for participating companies of which € 2.2 mio realised - € 10.8 mio still expected (83%)

Already realised after 6-12 months:

- Investment: € 0.5 mio (infrastructure) + € 2.6 mio (employment) = € 3.1 mio
- Revenue: € 2.2 mio
- In addition, reorientation of investment: € 0.5 mio

Based on a sample of 14 companies, results also showed that these living lab insights supported the decision making process within these companies, thus reducing risk in their business innovation track, product development activities and go-to-market strategy. The quantified economic effects showed significant impact on investments, revenue and job creation.

ENoLL network and ENoLL members

The European Network of Living Labs (ENoLL) is the international network of living labs in Europe and worldwide. ENoLL is a global network of open innovation ecosystems. The network of living labs places people at the centre of product development and innovation. The network and the ENoLL members provide innovation services for small and medium-sized international companies, the public sector, organisations and citizens. ENoLL promotes the development of business and industry and the creation of tax revenue and jobs.

Created and launched at the end of 2006 the network has grown in 'waves' up to this day. To date, 9 Waves have been completed resulting in 395 historically accepted living labs all over the world with currently a core of 170 living labs, the networks active members, present in 20 of the 28 EU Member States, 2 of the candidates. ENoLL is present in Europe, Asia, Africa, North and South America, and Oceania. ENoLL is a network of innovation networks or ecosystems

represented by a legal entity so called the living lab host organisation. The ENoLL members (host organisations of the living labs or ecosystems) are mainly research institutions, public local and regional authorities and agencies, public-private innovation actors or private companies. They all represent a community of change makers that have contributed over the years to generate business and societal positive impact through open and user driven innovation.

Joining the network: The ENoLL "waves"

The acceptance of new members in the ENoLL network is done through the so-called "waves", an annual process meant to evaluate and benchmark Living Labs. The process has been designed following the ENoLL key principles, components and values as defined earlier in this booklet. The wave process is an open call and invitation to join the network for public and private organisations from across the world actively

committed to engaging and empowering users and citizens to take part in sustainable innovation processes. The application period (normally 3-4 months) is followed by an assessment by a panel of experts selected from within the ENoLL community in a peer-led review process. 20 different indicators/criteria are used for the assessment and clustered into 5 different categories (Organisation, Openness, Resources, Users&Reality, and Value). Accepted living labs are awarded the ENoLL quality label.

ENoLL waves selection criteria

- Evidence of co-created values from research, development and innovation
- Values/services offered/provided to LL actors
- Measures to involve users
- Reality usage contexts, where the LL runs its operations
- User-centricity within the entire service process
- Full product lifecycle support – capability and maturity
- LL covers several entities within value- chain(s)
- Quality of user-driven innovation methods and tools
- Availability of required technology and/ or test-beds
- Evidence of expertise gained for the LL operations
- Commitment to open processes
- IPR principles supporting capability and openness
- Openness towards new partners and investors
- Business-citizens-government partnership: strength and maturity
- Organisation of LL governance, management and operations
- Business model for LL sustainability
- Interest and capacity to be active in EU innovation systems
- International networking experience
- Channels (e.g. web) supporting public visibility and interaction
- People/positions dedicated to LL management and operations

North America

South America

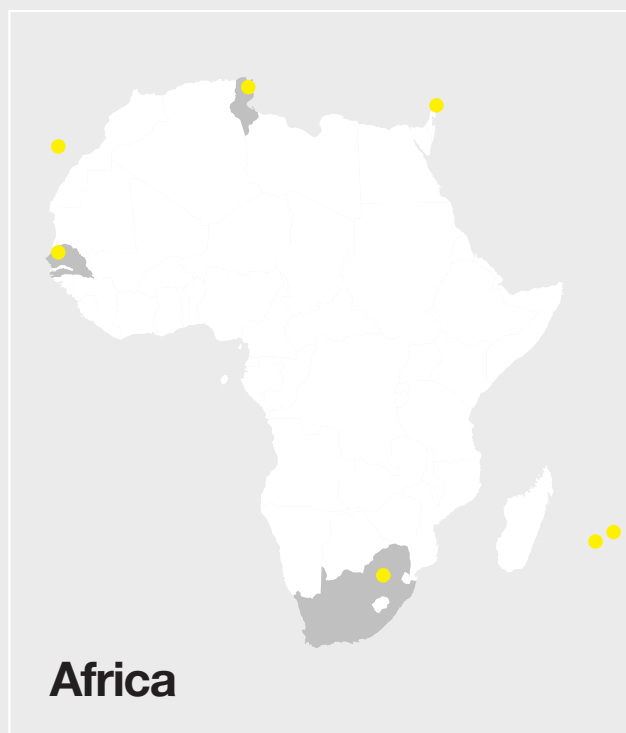
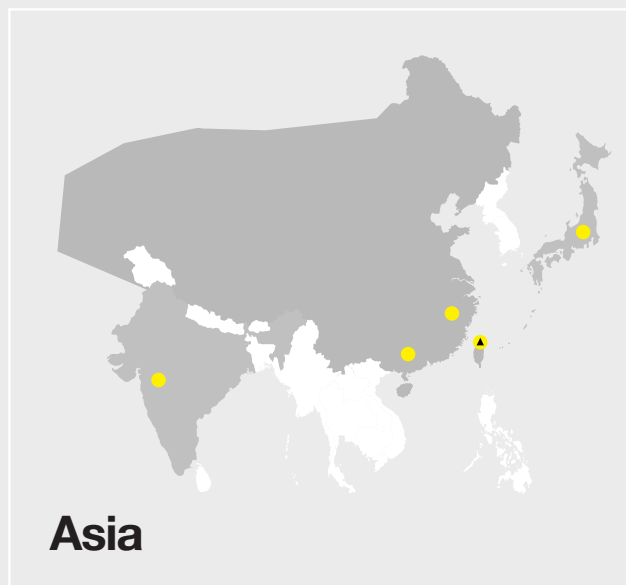
Oceania

Map ENoLL active members. August 2015

▲ Effective Member

ENoLL active Living Labs (August 2015) / Country				
France	26	Canada	6	Germany
Spain	23	Portugal	5	Hungary
Italy	20	Netherlands	4	Switzerlan
UK	13	Slovenia	4	Turkey
Belgium	10	Sweden	4	Australia
Finland	8	Denmark	3	Austria

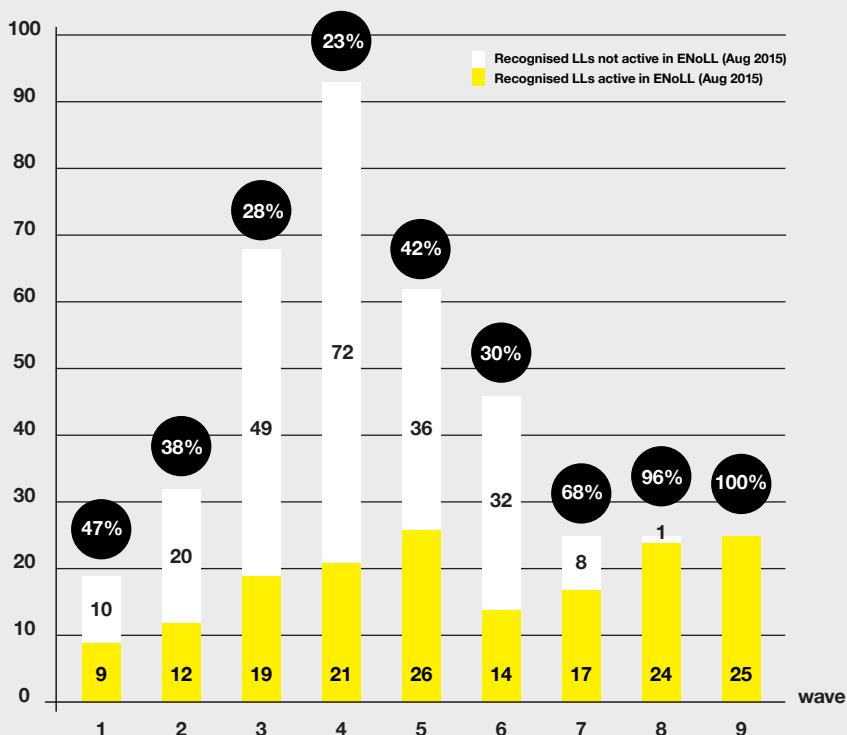
Note: this map does not show precisely the location of all living labs but highlights hot spots.



3	China	2	Brazil	1	Luxembourg	1	Taiwan	1
3	Colombia	2	Croatia	1	Mauritius	1	Trinidad and Tobago	1
3	Greece	2	Estonia	1	Norway	1	Tunisia	1
3	Ireland	2	India	1	Senegal	1		
2	Poland	2	Japan	1	Serbia	1		
2	USA	2	Lebanon	1	South Africa	1		

Active and total number of ENoLL recognised Living labs per wave

The percentage in each column represents the percentage per wave of recognised living labs still active in August 2015



Historical view of the ENoLL Network

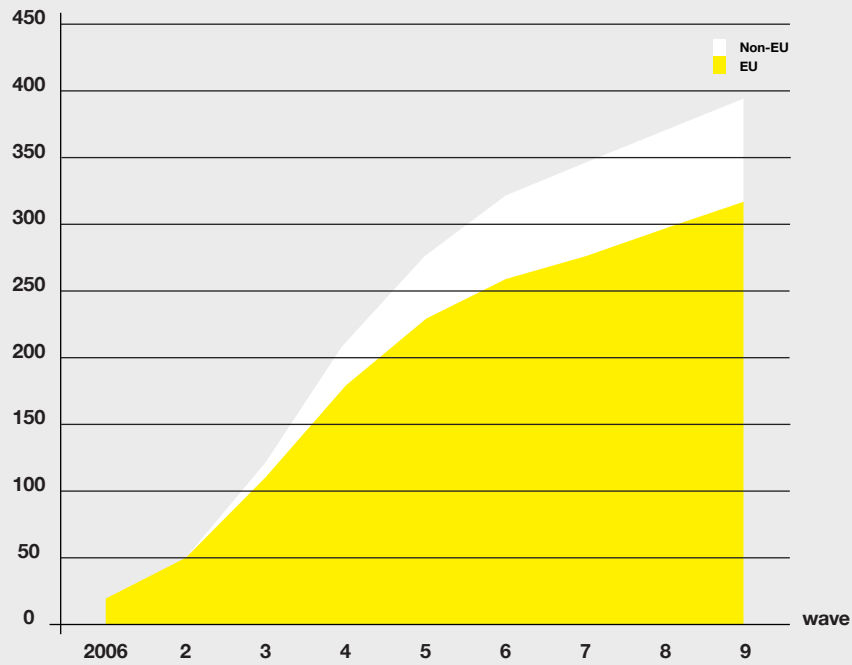
ENoLL has so far recognised and accepted close to 400 living labs as part of the network through the waves process over a period of almost 10 years. Over 40% of all the historically accepted members shape the current ENoLL network today and remain active in the network.

As open innovation structures and ecosystems, living labs face many different challenges to become permanent and territorially well-established structures over the time. The reduction in recognised to active network members can be explained by the following reasons:

- Living Lab structures that did not survive beyond a particular funded programme
- Host organisation continues operations but living lab activities discontinued beyond a particular funded project/ programme
- Disappearance or change of activity of the host organisation
- Political, governance or leadership changes
- Lack of interest or perception of value in being part of the international community of living labs (active living lab but not engaged with the ENoLL network)

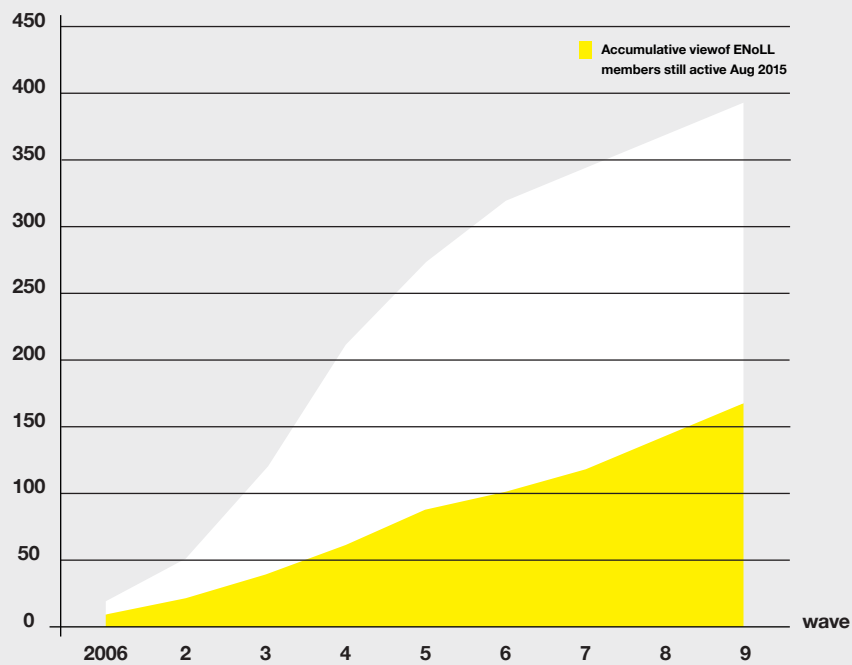
Some statistics per country and per wave of the historically accepted living labs are provided in this booklet. The complete list of accepted members can be found in annex.

Accumulative view of historically recognised Living Labs



Accumulative view of historically recognised Living Labs.

Total and active





ENoLL Living Lab community at OpenLivingLab Days 2015 in Istanbul
© ENoLL

List of ENoLL members (Aug 2015)

The reader can find here the whole list of ENoLL active Living Lab members, as per approval of the ENoLL General Assembly, August 2015. The list is sorted by country and by wave. The whole list of historically recognised or labelled living labs can be found at the end of this booklet

Country	Living Lab name	Host organisation	Membership	Wave
Australia	Adelaide Living Laboratories	CRC for Low Carbon Living	Adherent	8
Australia	Future Logistics Living Lab	NICTA	Adherent	5
Austria	EVOLARIS MOBILE LIVING LAB (Graz)	evolaris next level GmbH	Adherent	3
Austria	CityLAB Graz	CityLAB Graz	Adherent	9
Belgium	iMinds	iMinds	Effective	1
Belgium	Ghent Living Lab	City of Ghent	Adherent	5
Belgium	LeYLab (Light & You Lab)	Alcatel-Lucent Bell	Adherent	5
Belgium	Egg Lab	The Egg Exploitation	Adherent	5
Belgium	Living and Care Lab (LiCaLab)	City of Turnhout	Adherent	6
Belgium	JF Oceans	JF Oceans	Adherent	6
Belgium	Careville	City of Genk and Hasselt	Adherent	8
Belgium	Innovage	SEL GOAL	Adherent	8
Belgium	AIPA – Ageing in Place Aalst	City of Aalst	Adherent	9
Belgium	ONLINE buurten / ONLINE neighbourhoods	Public Centre of Social Welfare of Bruges	Adherent	9
Brazil	Habitat Living Lab		Adherent	4
Canada	Urban Hub	Society for Arts and Technology [SAT]	Adherent	4
Canada	Manda Lab	Communautique	Adherent	5
Canada	1125@Carleton(The Innovation Edge: A Living Laboratory)	Carleton University	Adherent	7
Canada	Digital Transition Laboratory	CEFRIO	Adherent	7
Canada	Rehabilitation Living Lab in the mall (RehabMaLL)	Centre for Interdisciplinary Research in Rehabilitation of Greater Montreal (CRIR)	Adherent	8
Canada	Living lab en innovation ouverte (LLio)	Cégep de Rivière-du-Loup	Adherent	9
China	Green Living Lab		Adherent	3
China	LivingLab Shanghai	Tongji University	Adherent	9
Colombia	CINTEL	Telecommunications Research Center	Adherent	4
Colombia	ExPIN MediaLab	Universidad Autónoma de Occidente - UAO	Adherent	7
Croatia	Rijeka iLivingLab	Faculty of Maritime Studies	Adherent	4
Denmark	Copenhagen Living Lab	Copenhagen Living Lab	Adherent	2
Denmark	Digital Urban Living Lab (DULL)	Regional Government of Midt Jylland	Adherent	5
Denmark	DOLL - Danish Outdoor Lighting Lab	Gate 21	Adherent	9
Estonia	Smart City Lab	Smart City Lab	Adherent	9
Finland	Helsinki Living Lab - Forum Virium Helsinki	Forum Virium Helsinki	Effective	1
Finland	Laurea Living Labs Network	Laurea University of Applied Sciences	Effective	2
Finland	HumanTech LivingLab	JAMK	Adherent	3
Finland	TAMK Living Lab	Hermia	Effective	3
Finland	Agro Living Lab	Frami	Adherent	2
Finland	Lahti Living Lab	Lappeenranta University of Technology	Adherent	2
Finland	OULLabs Oulu Urban Living Labs	University of Oulu	Adherent	4
Finland	Living Lab for Well-being and ICT (TWICT)	Turku University of Applied Sciences	Adherent	4

Country	Living Lab name	Host organisation	Membership	Wave
France	LUSAGE Gerontechnology Living Lab	Hôpital Broca - Assistance Publique - Hôpitaux de Paris	Adherent	6
France	Brie'Nov	Brie'Nov	Adherent	6
France	LL ICT Usage Lab	INRIA	Adherent	1
France	LEVIER (Laboratoire d'Expérimentation et Valorisation Images Et Réseaux)	Images et Reseaux	Adherent	2
France	Autonom'Lab	Pôle régional d'innovation en Santé et Autonomie des personnes	Adherent	3
France	Issy-les-Moulineaux Medialand	Issy Media	Adherent	3
France	3D Living Innovation	La Fabrique du Futur	Adherent	3
France	TPMed Lab	TPM Digital Country Department	Adherent	3
France	Design Creative City Living Lab (DCC-LL)	Cité du Design	Adherent	4
France	Erasme Living Lab	Département du Rhône	Adherent	4
France	Lorraine Smart Cities Living Lab	ERPI - Université de Lorraine	Adherent	4
France	Normandy Living Lab	Secure Electronic Transactions (TES)	Adherent	2
France	CESARS	Centre national d'études spatiales (CNES)	Adherent	4
France	eCare Lab	MEDICALPS	Adherent	4
France	Le Restaurant Living Lab	Centre de Recherche de l'Institut Paul Bocuse	Adherent	5
France	Universcience Living Lab	Cité des sciences et de l'industrie	Adherent	5
France	Smart City Living Lab	Dedale Association	Adherent	6
France	Nova CHILD's Living Lab	Nova CHILD	Adherent	7
France	Living Lab ActivAgeing	Université de Technologie de Troyes	Adherent	7
France	Réunica Domicile	Réunica	Adherent	8
France	Silver Normandie Hub	Regional Agency for Innovation	Adherent	8
France	Streetlab	Streetlab	Adherent	8
France	Digital Home Living Lab (DHLL)	Association Pour Habiter Interactif (PHI)	Adherent	9
France	Hygée Lab	Centre Hygée	Adherent	9
France	University of Reunion Island Living Lab for Teaching and Learning	University of Reunion Island	Adherent	5
France	PAsteur Innovative Living Lab Of Nice 2020	City of Nice	Adherent	7
Germany	Knowledge Workers Living Lab	CETIM	Adherent	1
Germany	Future Care Lab	RWTH Aachen University	Adherent	4
Germany	PRAXLABS: Creating innovative technologies in practice	University of SiegenInformation Systems and New Media	Adherent	4
Greece	Living Lab Thessaly (LLT)	Centre for Research and Technology	Adherent	3
Greece	Telecommunication Networks and Integrated Services Laboratory (TNS LL)	University of Piraeus Research Center	Adherent	5
Hungary	Győr Automotive Living Lab	Hungarian Vehicle Engineering Cluster	Adherent	1
Hungary	Innovative Learning Solutions (Flexilab)	Corvinno Technology Transfer Center Nonprofit Public Company Ltd.	Adherent	5
Hungary	Well-being Living Lab Nagykovacsi	TREbAG Property- and Projectmanagement Ltd	Adherent	5
India	Smart Village Living Lab (SVLL)	School of Applied Science, KIIT University	Adherent	9
Ireland	CASALA Living Lab	Dundalk Institute of Technology	Adherent	5

Country	Living Lab name	Host organisation	Membership	Wave
Ireland	Dublin LivingLab	The Green way	Adherent	8
Italy	Trentino as a Lab	Informatica Trentina Spa	Effective	2
Italy	TLL - Territorial Living Lab for the Sicilian Region	ARCA, Consortium for the application of research and the creation of innovative enterprises	Adherent	2
Italy	Living Piemonte	CSP	Adherent	3
Italy	Research Innovation Centre	Consorzio Roma Ricerche	Adherent	4
Italy	ICT Laboratory for the Public Administration (LabICT-PA)	Lepida SpA	Adherent	5
Italy	Scuola Superiore Sant'Anna Living Lab	Scuola Superiore Sant'Anna	Adherent	5
Italy	City of the Future Living Lab	Fondazione Centro San Raffaele del Monte Tabor	Adherent	6
Italy	ValléeLab	Alcotra Innovation Living Lab in Aosta Valley	Adherent	6
Italy	Trento H&WB-TL	Trento Rise	Adherent	6
Italy	CRICKET LIVING LAB	Openwork s.r.l.	Adherent	8
Italy	KLIO Lab	DHITECH s.c.a.r.l.	Adherent	8
Italy	Green Schools	Province of Treviso	Adherent	8
Italy	St.E.SE.Geo (Geo-localized Structures and Services Lab)	Computer Sharing Sud s.r.l.	Adherent	8
Italy	TIE-LL Technology Innovation Ecosystem	DHITECH	Adherent	8
Italy	TAGS (Technology Infrastructure allowing to experiment gamification strategies for social services innovation)	I & T Sistemi Srl, Bari	Adherent	8
Italy	Lecco Innovation Living Lab	Univerlecco	Adherent	9
Italy	Apulian Living Lab on "Healthy, Active & Assisted Living" (INNOVAALab)	INNOVAAL, (Public-Private Partnership on Research & Innovation in Active & Assisted Living)	Adherent	9
Italy	Formedil Lab	Formedil Hub	Adherent	9
Italy	Apulian ICT Living Lab	InnovaPuglia SpA	Adherent	9
Italy	Lunigiana Amica	Lunigiana Amica	Adherent	3
Japan	Tokyo Living Lab	Reality Media Project, Graduate School of Media Design, Keio University	Adherent	7
Lebanon	Berytech Living Lab (BeLL)	Berytech Technology Pole	Adherent	6
Luxembourg	Technoport Living Lab Luxembourg	Technoport SA	Adherent	7
Mauritius	Innovative Learning & Teacher Education Living Lab (IL.TE.LL)	Centre for Innovative and Lifelong Learning, University of Mauritius	Adherent	9
Netherlands	Amsterdam Living Lab	Amsterdam City Council	Adherent	3
Netherlands	Next Generation Labs East Netherlands NGL-EN	City of Deventer	Adherent	4
Netherlands	Care Innovation Center West-Brabant	Stichting Care Innovation Center West-Brabant	Adherent	8
Netherlands	Eindhoven Living Lab	City of Eindhoven	Adherent	8
Norway	Wireless Trondheim Living Lab	Wireless Trondheim NTNU	Adherent	3
Poland	Poznan Living Lab	IBCh PAS - Poznan Supercomputing and Networking Center	Effective	7
Poland	KRAKOW LIVING LAB	Krakow Technology Park	Effective	9
Portugal	Lighting Living Lab	Lighting Living Lab, Association	Adherent	3
Portugal	Smart Rural Living Lab	Penela Municipality Praça do Município	Adherent	4

Country	Living Lab name	Host organisation	Membership	Wave
Portugal	Network of creative living labs (Crealab)	INTELI – Intelligence in Innovation, Innovation Centre	Adherent	9
Portugal	SMoLL - Smart Mountains Living Lab	Municipality of Seia	Adherent	9
Portugal	RENER Living Lab	INTELI – Inteligência em Inovação	Adherent	2
Senegal	African Living Lab ISEG/UNIDAF	Cesmi Faculté de Droit Univeristé de Dakar	Adherent	4
Serbia	Precision Agriculture Living Lab	Biosense Center, University of Novi Sad	Adherent	7
Slovenia	ICT Technology Network	ICT Technology Network	Adherent	2
Slovenia	Laboratorij Odprtega Inoviranja ORbITaLA	Mariborska razvojna agencija (eng: Maribor Development Agency)	Adherent	7
Slovenia	Slovenia eLivingLab	Faculty of Organizational Sciences, University of Maribor,	Adherent	1
Slovenia	E-zavod Living Lab	E-zavod, Institute for Comprehensive Development Solutions	Adherent	5
South Africa	Sekhukhune Rural Living Lab	Meraka Institute	Adherent	4
Spain	i2Cat Catalonia Digital Lab	i2CAT foundation	Effective	1
Spain	Bird Living Lab	SOCIEDAD DE CIENCIAS ARANZADI Gaia	Effective	5
Spain	espaitec Living Lab (eLiving Lab)	espaitec, Science Technology and Business Park of Jaume I University	Effective	5
Spain	Guadalinfo Living Lab Network	Consorcio Fernando de los Rios Foundation	Effective	6
Spain	Barcelona Laboratori	Institut de Cultura de Barcelona (ICUB)	Effective	7
Spain	Mobility for sustainable territories – Mobility Lab	Gaia	Adherent	5
Spain	Audiovisual Living Lab Terrassa (ALT)	Parc Audiovisual de Catalunya	Adherent	5
Spain	SPORTIS Living Lab	Gaia	Adherent	5
Spain	Bilbao Ekintza, EPEL (Comercios Innovadores de Bilbao)	Lan Ekintza Bilbao	Adherent	5
Spain	Ergo Lab	Gaia	Adherent	6
Spain	IoT Smart Santander Living Lab	Universidad de Cantabria	Adherent	6
Spain	S.S.I. Living Lab	Servicios Sociales Integrados, S. Coop.	Adherent	7
Spain	NClic, Social Innovation Centre	Fundación Nuevas Claves Educativas (FNCE)	Adherent	7
Spain	EVOMOBILE	University of Valencia	Adherent	8
Spain	Iberian Institute in Psycho-Sciences Lab - Research and Innovation Centre	Fundación INTRAS	Adherent	8
Spain	UAB Smart and Sustainable Campus Living Lab	Universitat Autònoma of Barcelona	Adherent	8
Spain	Library Living Lab Barcelona	Computer Vision Centre / Universitat Autònoma de Barcelona	Adherent	9
Spain	Living Lab Social in real environment	Fundacion Ageing Social Lab	Adherent	9
Spain	Food&HealthLab	University of Valencia	Adherent	9
Spain	Citilab Cornellà	Fundació Privada pel Foment de la Societat del Coneixement	Adherent	3
Spain	MIMMALAB - Interactive Music Museum Living Lab	InterExpo	Adherent	5
Spain	Living Lab Comercios Innovadores de Gran Canaria	Consejería de Empleo, Industria, Comercio y Artesanía del Cabildo de Gran Canaria	Adherent	7
Spain	Health Care Innovation Lab Orbital 40	Leitat Technological Center	Adherent	8
Sweden	Botnia Living Lab	Luleå University of Technology	Effective	1
Sweden	Halmstad Living Lab	Halmstad University	Adherent	3

Country	Living Lab name	Host organisation	Membership	Wave
Sweden	New Homes for Health	Hälsans nya verktyg	Adherent	4
Sweden	Stockholm Living Lab	Stockholm Living Lab/SICS	Adherent	4
Switzerland	Energy Living Lab	Entrepreneurship & Management Institute - University of Applied Sciences and Arts Western Switzerland	Effective	8
Switzerland	iHomeLab Living Lab	Lucerne University of Applied Sciences (LUAS)	Adherent	5
Switzerland	Mobile Communications and Computing for Quality of Life	University of Geneva, Institute of Services Science	Adherent	7
Taiwan	Living Labs Taiwan	Innovative DigiTech-Enabled Applications & Services Institute (IDEAS)	Effective	4
Trinidad and Tobago	User Experience Living Lab	The University of the West Indies	Adherent	7
Tunisia	Digi-Art Living Lab Tunis-Nabeul	NetInfo School of Art and Technology	Adherent	9
Turkey	Tepebasi Future Living Lab	Tepebasi Genclik Ve Spor Kulübü Derneg	Adherent	6
Turkey	Basaksehir Living Lab	Basaksehir Municipality	Adherent	6
Turkey	Smart City Istanbul Living Lab	Istanbul Metropolitan Municipality	Adherent	9
UK	KWest Research	Leinster House Partnership Ltd	Effective	3
UK	City Lab Coventry	Coventry University	Effective	5
UK	Manchester Living Lab	Manchester Digital Development Agency	Adherent	1
UK	Edinburgh Living Lab	University of Edinburgh	Adherent	2
UK	Social Informatics Lab (SiLab)	Newcastle University	Adherent	3
UK	Birmingham Communities Building Capacity	Digital Birmingham	Adherent	3
UK	FutureEverything Living Lab	FutureEverything CIC	Adherent	5
UK	Innovate Dementia Transational Living Lab	Liverpool John Moores University	Adherent	8
UK	Lab4Living	Sheffield Hallam University	Adherent	8
UK	Manchester Digital Innovation Living Lab	MMU	Adherent	8
UK	City Observatory	University of Strathclyde	Adherent	9
UK	TRAIL Living Lab (Translating Research and Innovation Lab)	University of Ulster	Adherent	2
UK	Sheffield City Region	Barnsley Metropolitan Borough Council // MundoJumbo Ltd	Adherent	5
USA	Roswell Voices LL	University of Georgia	Adherent	4
USA	CASA Dallas/Ft Worth Living Lab for Severe Weather	University of Massachusetts, Amherst	Adherent	9
UK	Lab4Living	Sheffield Hallam University	Adherent	8
UK	Manchester Digital Innovation Living Lab	MMU	Adherent	8
UK	City Observatory	University of Strathclyde	Adherent	9
UK	TRAIL Living Lab (Translating Research and Innovation Lab)	University of Ulster	Adherent	2
UK	Sheffield City Region	Barnsley Metropolitan Borough Council // MundoJumbo Ltd	Adherent	5
USA	Roswell Voices LL	University of Georgia	Adherent	4
USA	CASA Dallas/Ft Worth Living Lab for Severe Weather	University of Massachusetts, Amherst	Adherent	9

ENoLL Associated Members

ENoLL Associated Members are organisations that are involved in the activities of the association, but are not selected as living labs according to the ENoLL selection process. At the end of 2015 ENoLL had one Associated Member: Haaga-Helia University of Applied Sciences (Finland).



Haaga-Helia University of Applied Sciences Ltd. (Haaga-Helia) is located in Helsinki; the capital of Finland and it is part of the Finnish public educational system. It is privately run but steered and co-funded by the Finnish Ministry of Education and Culture.

Haaga-Helia is a practiced-based organisation that has developed multiple living lab related activities, such as:

- Helsinki Living Lab project and network has been one of the forerunners in living lab activities and methodologies in Finland. Helsinki Living Lab was both a communications hub and a brand to enable companies and the public sector to get in touch and co-operate with all the different living labs in the Helsinki metropolitan area.
- Some regional living lab projects include “Neloskierre” ESF funded project based on all Finnish University of Applied Sciences and their living lab operations. Haaga-Helia was the main coordinator. The co-created living lab tools and the results of the project have been remarkable for the Finnish Living Lab ecosystem.
- Also the on-going “Open Living Lab Services” (OLL) project is coordinated by Haaga-Helia and funded by the Uusimaa Regional Fund. The project focuses on connecting businesses and living lab operators.
- Some living lab projects of Haaga-Helia have been based on the viewpoint of the active citizenship including “Pasila Living Lab”, “Symbio Living Lab”, and “Skaftkärr Living Lab”. All of them successfully developed methods to engage citizens to innovate and develop their everyday lives.
- Haaga-Helia was also one of the pioneers for the industry specific living labs such as the “Finnish Hotel of Tomorrow”, followed by the “Finnish Conference Hotel of Tomorrow” and finally the “Meetings of the Future” - project, based on developing the user-driven spaces and services for efficient user experience in hotels and meetings.
- The “Experience World in Helsinki” main objective was to involve the end-users in the innovation process of designing an Experience World in Helsinki. The case is based on a co-operation between Haaga-Helia and the Finnish national broadcasting company, Yleisradio (YLE). The case was implemented by facilitating a series of innovation workshops by using the living lab methods, with the main goal of linking the end-users for the innovation practices.

Haaga-Helia is also part of many local and global networks including:

- European Network of Living Labs (ENoLL) in which Haaga-Helia has had an instrumental role from the beginning of the history of ENoLL.
- Haaga-Helia coordinates the Finnish Network of Living Labs (FNoLL) which consists of most of the Finnish living lab operators.
- Haaga-Helia manages DBTechNET –network, which is an initiative of European universities and IT-companies to set up a transnational collaboration scheme of higher level educational establishments, IT enterprises and vocational training centres.

All together Haaga-Helia R&D&I activities focus on user-driven innovation to provide advanced products, services and business operations for the benefit of businesses and society.

Living Lab networks

As the number of living labs increases worldwide so it does its diversity the needs for collaboration. Living Labs are today organising themselves in territorial (regional, national), cultural or thematic networks. Either under the umbrella or just in collaboration with ENoLL, these networks enrich and strengthen ENoLL's role and positioning.

One of the best examples of these networks is the France Living Labs network:



France Living Labs (soon Francophonie Living Labs) is a French non-profit association (1901 law) representing today the network of the French Living Labs (which had regular meetings from the 3rd wave in 2008) and from august 2014 the Francophone Living labs (Quebec, Belgium, France, Quebec, Switzerland, Tunisia, ..). France Living Labs and ENoLL cooperate under the strategic framework of the ENoLL-France Living Labs MoU, which was the first one in 2013 with a national network of Living Labs. Its current President, Dr. Brigitte Trousse (Inria), is also a member of the ENoLL Council.

For successful projects in Smart Cities (Energy, Environment, Mobility), Health, Active Ageing or based on Design for All, IoT, Arts & Technologies issued from French or Francophone living labs, the reader is invited to access the different francophone living labs via the ENoLL web site. Some French/ Francophone projects are illustrated via the events organised by France Living Labs. Further information can be found through the references provided at the end of this publication.

An in-depth view of the ENoLL leading members

Leading and fully supporting the living lab international movement is a core team of around 20 living labs. This section highlights their different structures, operations and tools to help the reader deepen their understanding of the reality, diversity and value of living labs in the ENoLL network. Following the three-layered model described earlier in this booklet this section provides an overview in the macro, meso and micro level of these living labs, with tangible examples.



Barcelona Laboratory (Barcelona, Spain)
 Bird Living Lab (Basque Country, Spain)
 Botnia Living Lab (Luleå, Sweden)
 Bristol Living Lab (Bristol, UK)
 Coventry Living Lab (Coventry, UK)
 Energy Living Lab (Western Switzerland)
 e'LivingLab (Castellon, Spain)
 Forum Virium Helsinki (Helsinki, Finland)
 FutureLab (Poznan, Poland)

Guadalinfo Living Lab Network (Andalusia, Spain)
 iMinds Living Labs (Flanders, Belgium)
 i2CAT Living Labs (Catalonia, Spain)
 Krakow Living Lab (Krakow Poland)
 Laurea Living Labs (Espoo, Finland)
 Smart City Istanbul Living Lab (Istanbul, Turkey)
 Taiwan Living Lab (Taipei, Taiwan)
 TAMK Living Lab (Tampere, Finland)
 Trentino as a Lab or TasLab (Trento, Italy)

bird living lab

Basque Country, Spain

HOST ORGANISATION

GAIA is the Association of Industries for Electronic and Information Technologies in the Basque country, with a mission to promote the development and growth of the electronic and telecommunications sectors and to promote the assimilation and efficient utilisation of the technologies with the aim of collaborating in the development of the information and knowledge society. GAIA is host organisation of several ENoLL labelled living labs



Bird Living Lab, situated in the Biosphere Reserve of Urdaibai (Basque Country), is the local, national and European hub in developing technology for nature monitoring with the aim of adopting effective public policies in environmental management and biodiversity, and in smart communities' specialisation. Bird LL's mission is to:

- Lead a network of exchange of goods and services in the field of ornithology and derivate tourism
- Co-create, test and validate ICT products for environmental



management and derivate services and scale them up to new markets.

- Create a community of knowledge in nature monitoring, environmental management and smart communities.
- Generate a dynamic launching of innovation and new business structures in this area, allowing the generation of an emerging sector in which Europe can be leader.

Bird Living Lab focuses on the definition and establishment of a living lab approach and methodology to speed and

strengthen the projects development, as well as for prototyping of the ideas and products, as well as for final users' involvement in the process. Furthermore, it provides a new way of thinking, not just within the project methodology, but also within the project outcomes and potential, re-thinking about the technology developed, giving new uses and expending their potential market to new sectors and countries, generating new business opportunities.

Example Projects

MONNA's project is a best in class example of the potential entrepreneurial smart discoveries that can occur from a combination of a territory's assets and opportunities at local and international level, guided by a living lab.

Despite Urdaibai's territory economic development possible limitations, its location had some great hidden opportunities for research activities. These activities developed by the Bird Living Lab and linked to the potential application of new technologies, has given European entities of Aquitaine and the Basque Region the chance to discover the impact regarding entrepreneurial discovery possibilities.

The MONNA project combines technological development for the analysis of bird migrations through European-based emerging technologies in the field of geo-positioning and the research and development of a bird monitoring platform for

the exploitation of useful data in public science and technology. The project is also key in driving the design of public policies on environment issues. In addition to research activities, Bird Living Lab is contributing to generate returns in smart economy and social terms, by running related activities:

- Frontline research in the field of ecology, climate change and biodiversity
- Training and education on the environment and biology (ornithology)
- Testing of technologies that are convergent with scientific, technological and economic uses and potentially commercialised
- Generation of innovation projects based on technologies applicable in global value chains and EU networks such as POCTEFA, ENOLL, EURING, ARTEMIS etc.
- Tourism, of a selective nature and with high purchasing power, linked to researchers who stay at Urdaibai Bird Centre.

BIRD Living Lab deals with the mission to co-create, test and validate ICT products for environmental management and derivate services and scale them up to new markets, and create also a community of knowledge in environmental management and smart communities, generating a dynamic launching of innovation and new business structures in this area, allowing an emerging sector in which Europe can be leader.



Botnia Living Lab

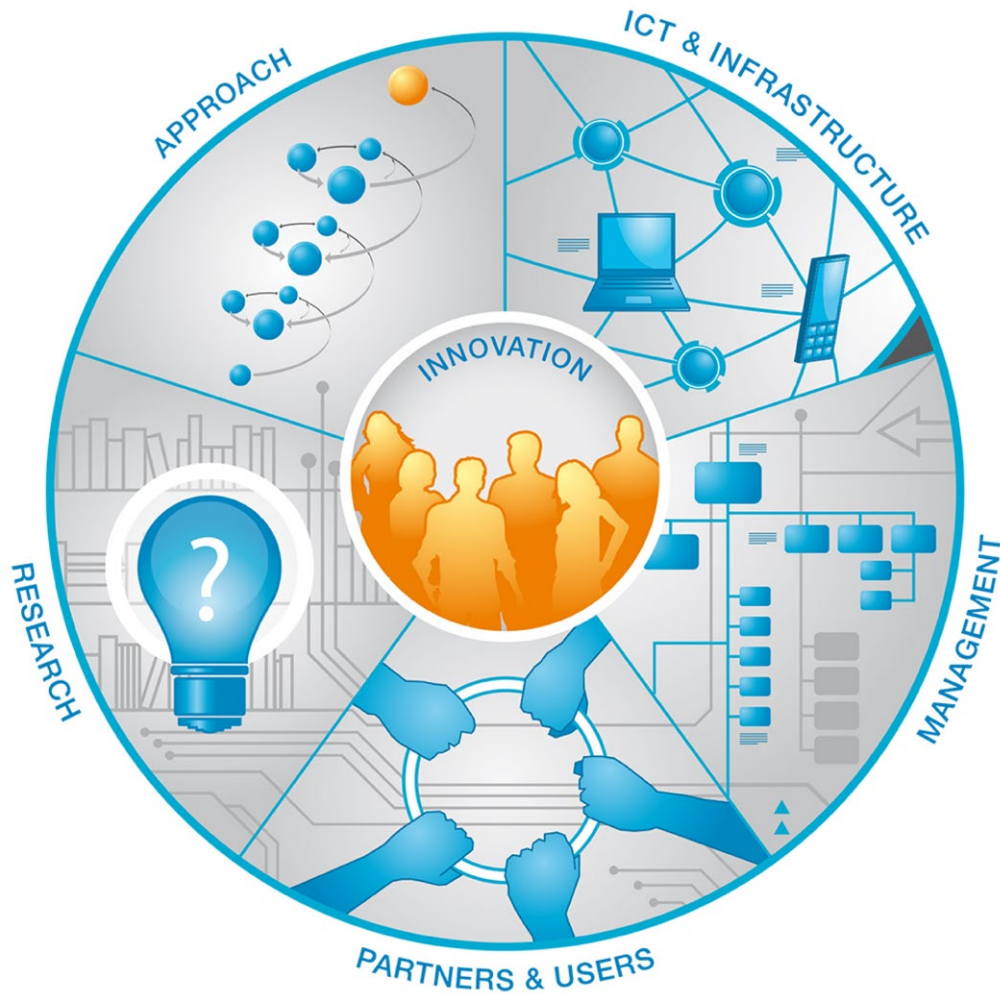
Luleå, Sweden

HOST ORGANISATION

Botnia Living Lab is hosted by the Centre for Distance-spanning Technology at Luleå University of Technology, a competence centre where the ICT-industry and public organisations work closely together with academia to accelerate new ICT innovations.

Botnia Living Lab is today one of the most successful European living labs and has matured from a test-bed (in 2000) to a real-life laboratory, including a community of 6000 co-creative users (in 2015). Botnia's achievements are based on user-centric research, development and innovation (RDI), supported by innovative methods, tools and experts. To support the process they have also developed the living lab methodology FormIT, adopted by many living labs around Europe and exploited by industry. FormIT supports user involvement to accelerate new ICT innovations. It's also a methodology for user empowerment to capitalise on the power of the crowd.

Botnia works in a Quattro Helix partnership with users, researchers, IT industry, SMEs and municipalities to bring added value to all stakeholders. Botnia's track record includes application areas such as: Mobile marketing, Traffic information, Energy saving, Sports and culture, e-democracy, IoT, Security and Privacy as well as Smart Cities/Regions. Botnia Living Lab is one of the founders and effective members of the European Network of Living Labs, dating back to 2006. Botnia Key Competence: Efficient methods and research expertise for planning and performing user-involvement activities in pilots and Botnia Key Capabilities: Professional management and performance of pilots in real life settings including both technology and involvement of the entire value-chain of the actual solution being tested including the end-users



Example Projects

APOLLON (2009-2012) focused on leveraging cross-border pilots with best-of-class methods for setting up, developing and operating sustainable networks of living labs. The project ran four cross-border living lab experiments, i.e. in the Homecare and Independent Living, Energy Efficiency, eManufacturing and eParticipation domain.

USEMP (2013-2017) (User Empowerment for Enhanced Online Presence Management) is a project funded by EU FP7 with the mission to raise citizens' awareness of their digital footprint in social media and give the users the control

of their personal data. The project applies a living lab approach involving users in the design, development and testing of the USEMP tools.

OrganiCity (2015-2018) is an EU-funded project that puts people at the centre of the development of future cities. The project brings together 3 leading smart cities and a total of 15 consortium members with great diversity in skills and experience. Designing and using so-called "smart city" technologies provide ways to improve cities' services for citizens while at the same time reducing resource consumption.

Living Lab methods and tools

For the process of user involvement Botnia Living Lab has developed the Form-IT methodology, an iterative and interactive process in several steps for user-engagement in all phases of the development of an IT-based service/product – from need-finding to beta-trial and pre-market launch. For the user-involvement it's very important to recruit the right users in accordance with the purpose of the experiment: and with Botnia's support they help select the right users for the purpose. When running a user investigation different motivators are triggered to get different users on board and to stimulate their actions together with easy communication and clear descriptions on what they should do, when and how.

Botnia Living Lab is an environment for end-user involvement in RDI projects focused on IT-usage (of today and in the future). Botnia Living Lab and the FormIT Methodology have proved to be a powerful instrument to:

- **speed up the innovation process from idea to market launch**
- **to co-create and improve innovative ideas**
- **to investigate and create new business opportunities**





Bristol Living Lab

Bristol, UK

HOST ORGANISATION

Knowle West Media Centre (KWMC) brings together individuals, communities and a wide range of partners to co-design spaces, tools and technologies that meet local needs. It is a place to innovate and trial ideas that put citizens at the heart of the collaborative process.

The Bristol Living Lab at Knowle West Media Centre works closely with communities and individuals to understand how digital technologies can be utilised to meet local needs and address challenges. KWMC is a place where citizens, artists, technologists, businesses and large organisations can come together to innovate and explore new possibilities – from solar power initiatives to cutting-edge healthcare work using sensors.

KWMC has 20 years' experience of working in Knowle West – an area of approximately 5,500 households in south Bristol, UK – and has developed strong relationships with individuals, groups and organisations. KWMC aims to bring about positive social, cultural and economic change by supporting people to create, make, innovate and produce. Rather than treating people simply as 'consumers' and assuming that technology alone is the solution to a problem, KWMC brings different people together to co-design solutions and develop new ideas.

KWMC's Bristol Living Lab is enabler-driven: the organisation often acts as a 'broker' between citizens and large companies, ensuring that each participant is able to contribute their knowledge and experience. KWMC adopts an 'action research' approach, where continual reflection and evaluation are built in to the working process, and this enables KWMC

to be flexible and responsive to the changing needs of partners and communities.

KWMC is currently working in the following areas:

- supporting people to create the neighbourhoods and city they want through a citizen sensing programme
- creating opportunities for training and skills development, particularly in data literacy and digital manufacturing
- developing innovative solutions to sustainability and environmental issues
- building resilient communities and developing ideas about how we might live in the future

Example Projects

3eHouses was a partnership project that included explorative, experimental and evaluation stages and aimed to help Council tenants reduce their energy consumption. Equipment was installed in 100 homes to monitor electricity and gas and participants could view their usage on a tablet computer via a visual interface developed by an artist. KWMC used a variety of methods to engage and support participants, and the artist worked closely with participants to ensure that the information that was represented (including cost and usage) and the visualisations that were created were accessible and

understandable. During the project participants reported a reduction in their bills and a desire to change their energy behaviours, and KWMC retained all participants in the Knowle West pilot. KWMC went on to develop their work in data visualisation in future projects exploring solar energy and local decision-making.

IES Cities is a current three-year European partnership in four pilot cities including Bristol. Each city in the multi-stakeholder project is developing a series of mobile apps based on an open platform, which bring together open government data and information contributed by citizens to create internet-based services that are relevant to the needs of each city. The project contains explorative, experimental and evaluation stages, as users have been actively involved in the development, testing and evaluation of the apps within a specific local context. The 'local social network' app My Knowle West was nominated for an 'Intelligent Communities' award at the 2015 Next Gen Awards.

KWMC is also developing The Factory, a new digital manufacturing space that offers access to tools, training and rapid prototyping, using CNC routers and laser cutters. As another project that contains explorative, experimental and evaluation elements, The Factory supports makers at all stages of the innovation process, from design and development

to prototyping and production, and offers services to a range of clients including local people, schools, large businesses and artists. The Factory recently received the Alfred Telling Award from Bristol's Guild of Guardians for its contribution to making in the city.

Living Lab methods and tools

Working with Bristol City Council and Ideas for Change, KWMC has developed "The Bristol Approach" to Urban Participatory Sensing. The Approach provides a new framework for running inclusive, community-driven digital projects that involve sensor technologies and which will lead to the creation of an Open City Commons. The framework was launched in November 2015 and KWMC hopes that their iterative applications in future technology programmes will help people better understand how active citizenship can be combined with digital innovation.

Following consultation and collaboration with female activists from Knowle West and a group of academics, KWMC has also developed two sets of 20 recommendations: 'Tips and Tricks for community activists' and 'Tips and Tricks for academics working with community activists'. The advice ranges from being 'dogged but not inflexible' to remembering that experts should be 'on tap, not on top'. All 40 recommendations are represented by coloured illustrations on a set of small cards and KWMC has used them to stimulate debate and encourage reflection during training and workshops. The tools were used at OpenLivingLab Days 2015 in Istanbul to enable other Living Labs to reflect on how they can create positive relationships with communities, create an environment of trust and openness, and demonstrate the impact of their work, with citizens involved at all levels. KWMC is now developing, with ENoLL, a set of 20 'Tips and Tricks for Living Labs'



**Bristol's Living Lab at
brings organisations
communities together
ideas that put citizens
heart of design and i**



Knowle West Media Centre
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Coventry Living Lab

Coventry UK

Coventry University, in partnership with Coventry City Council, were successful in becoming a member of ENoLL in July 2010. The result of this was City Lab Coventry (CLC).

CLC is a joint venture between Coventry University and Coventry City Council, set up to address the Grand Challenges within a smart city context with a very clear focus on user driven innovation. The University and the City Council own 90% of the land within Coventry City Centre and have used this to support CLC as a real-life experimentation environment where users and producers can co-create and test innovations. CLC includes:

- Access to citizens, vehicles, buildings, roads and IT infrastructure within the city;
- A serious games studio/app lab, providing specialist support in the creation of 3D immersive simulations and serious games, from prototype development through to full commercialisation;
- Business support, working with SMEs, start-up businesses and corporate organisations;
- Large-scale low carbon vehicle trials and low impact building demonstration opportunities

HOST ORGANISATION

Coventry University is a forward-looking, modern university with a proud tradition as a provider of high quality education and a focus on research and business engagement
www.coventry.ac.uk



Since its inception, CLC has developed a strong brand and conduit for project partnering in European projects in the area of transport, infrastructure, buildings, and ICT. Although



these areas have naturally become a focus, it does not exclude opportunities in wider discipline areas. As such, CLC has expanded rapidly to support a Smart Specialisation approach to innovation and local growth, focussing on large scale investment and integration within the innovation ecosystem in intelligent mobility, digital and creative, healthcare and advanced manufacturing.

Example Projects

Warm Neighbourhoods (Dallas)

A living lab approach to explore what potential users would want from a consumer care service platform to help people live independently. A user driven approach was utilised to develop the service with stakeholders, and test the service in situ with older people and their families and friends. The

results from this initial pilot are now being used to improve the service to move into a larger-scale trial.

UK Autodrive

A Co-located driverless cars trial involving 2 different vehicle types. The project is led by Arup, MIRA, Siemens JLR and Coventry City Council. The project has been awarded and will commence in early 2016.

Coventry Fab Lab

A social innovation and impact hub that is a home where citizens of all ages, makers, doers, entrepreneurs, activists, creative, students and scientists can come together to build a better Coventry. FabLab Coventry is a collaboration between Coventry University, Coventry City Council and the University of Warwick.

Living Lab methods and tools

066

CLC has a suite of tools and methods, grounded in empathic design to directly engage users in end product development. These tools and methods are used to connect the functional innovation with user behaviour to result in better-designed products and services. Living labs, in our opinion, are excellent environments for developing disruptive or breakthrough innovation, which meet the unarticulated needs of the customer, as they allow the designer/inventor to uncover unexpected uses of a product or service, as well as highlighting interdependencies. If these are discovered in a living lab environment then the designer/inventor will have the opportunity to re-design according to use patterns, to this end we have aligned our usability labs and a real world test environment with co-creation techniques.

As a city living lab, Coventry's innovation ecosystem has been developed through a range of collaborative approaches including; grass roots; creative user experiments; experimenting with new technologies, and as a platform for new business opportunities. Successful innovation in the transport, digital, creative and advanced manufacturing sectors evidences the power of Coventry as an orchestrator and enabler of innovation.





Energy Living Lab

Western Switzerland

HOST ORGANISATION

The Institute of Entrepreneurship & Management from the University of Applied Science Western Switzerland has been conducting applied research in the field of entrepreneurship, open innovation and business model design for the past decade. Energy is one of the three strategy axes with tourism and health.



The Energy Living Lab (ELL) is an open innovation ecosystem dedicated to energy efficiency and the development of renewable energies in Western Switzerland. It is composed of the University of Applied Science Western Switzerland, host of the living lab, Chablais Agglo representing the public authorities of this French-speaking region, private companies in the field of energy, together with an association of users.

The goal of the living lab is to empower the users of energy (citizen of the region, employees of private companies, members of the association of users...) and integrate them into the innovation process, motivating them to participate, putting the right tools in place to enable a bottom-up dialogue, and translating ideas into sustainable commercial products or services.

Example Projects

New services for energy efficiency

Romande Energie, the local energy distributor, has collaborated with the ELL towards the goal of developing energy efficiency services in line with the needs of their customers. The Energy Living Lab has collected more than 500 ideas and has selected 30 of them, through a process involving internal and external experts. One of these ideas, rated by a community of users, could generate a new business model for this energy company.





Mobility in the Chablais Region

Chablais Agglo is conducting a large mobility project, together with the local public transportation company, (TPC) in the region. The idea is to develop physical infrastructure and adequate services necessary to help citizens in the region switch from private to public transport. The ELL supported this effort by using a service design toolkit to visualize what could help the customers toward a better travel experience. New services will now be launched by the public transportation company thanks to this project including a direct line between the main towns of the region.

New business models for agriculture

The ELL has also helped farmers in the region to launch a crowd-funding project for the financing of a biogas installation. The valorisation of waste by farmers is an opportunity for them to add new revenue streams to their existing business

model, while diminishing pollution generated by their activities (industrial ecology). The role of the ELL in this case is to be a facilitator, linking people with technical background on biogas, the Swiss biogas association, public authorities of the region supporting the project, as well as farmers, providing competences most notably in crowd-funding.

Many more companies and public authorities in the energy field find it necessary to better integrate their users in the innovation process in order to develop new products, which will be adopted by the market, thus increasing social acceptance of these solutions.

Living Lab methods and tools

A toolbox has been developed to propose the right method



Triebwagen Sbe 4/4 401 ausserhalb Les Diablerets im neuen Erscheinungsbild
 von 2000
 CC BY-SA 3.0
 © David Gubler

at the right time of the innovation process, adapted to the needs of different companies and public authorities (crowd-innovation platform, lead users toolkit, service design thinking, ethnography...). For instance, in the ideation phase, its crowd-sourcing platform – www.i-brain.ch – translated into 7 languages, enables a cheap and rapid ideation phase. It has been used for numerous companies.

Energy Living Labs goal is to place the user at the beginning of the value chain, to co-create energy efficient solutions with him and doing this will increase the social acceptance of projects.

e'LivingLab

Castellón, Spain

HOST ORGANISATION

Espatec is the scientific, technological and business park of Jaume I University in Castellón, Spain. Espatec focuses on advancing both the socio and economic development of the province and in the diversification of its industrial fabric.

e'livinglab

Experimental
Innovation
espatec

Living labs frequently emerge as cornerstone of a “coopetitive” intelligent society (smart-citizen) and from the perspective of e'LivingLab Science and Technology Park, living labs are considered tractor structures and projects in the vicinity of the Science and Technology Parks to encourage interaction among all players in the ecosystem of innovation.

Espatec, as a connector within the innovation system and link between academia and business, has strengthened its mission by providing an ideal environment in the province of Castellón in the form of e'LivingLab: an instrument to strengthen, where possible, the development of “coopetitive” innovation for all socio-economic agents in Castellón.





Since 2010 Espaitec is leading the e'LivingLab on the Campus of the University Jaume I, with the support of Ministry of Science and Innovation and the Ministry of Economy and Competitiveness through INNPLANTA2010 program with the support of the Generalitat of Valencia. In this context e'LivingLab has transformed the current campus to a so-called SmartCampus in which products and technologically advanced services are made available to the university community. By involving different actors on the campus as lead end users (democratisation of innovation) in the development of more innovative products and services the projects aims to improve the quality of life and environment of all actors involved.

e'LivingLab is a proof of concept and innovation pilot that extrapolates the methodology and some of the projects from the Living Lab into the city context (smart cities) and in rural areas (rural labs) in the province of Castellon. The living lab activities are developed in several sectors: green-tech, biotechnology, robotics, low carbon economy and ICT and they are developed by SMEs, students, R&D groups and university Staff in a co-creation process.

Espaitec, through e'LivingLab, is part of the European Network of Living Labs since 2011.

e'Livinglab fits in in three different Living Lab categories due to the diversity of the projects: Enabler-driven, Provider-driven and User-driven.

Example Projects

eBRICKHouse

eBRICKHouse, that joined recently to e'Livinglab, is a project which develops and constructs a home that is outstanding in its energy consumption and urban impact. This project should increased public awareness on the design of future houses which can be fully operated by solar energy and equipped with various intelligent interior systems such as heating and cooling systems which makes it suitable for different climates.

European Comparative Effectiveness research on online Depression - E-COMPARED, This project includes LABPSITEC R&D group at Universitat Jaume I of Castellon partner of e'Livinglab) The overall objective of the proposed project is to be able to provide evidence-based information and recommendations on the clinical and cost-effectiveness of Internet-based treatment for depression to mental health

care stakeholders and decision makers (including policymakers, health care professionals, health insurers, patients and employers).

A wide range of ecological variables will be taken into account by the project, including organisational features of mental care systems, related health policies, clinical guidelines, reimbursement and insurance regulations, privacy and security issues, existing IT infrastructures and their uptake. Research outcomes from the project will support stakeholders in making sound policy decisions on the treatment of depression and in making better use of limited resources.

[Living Lab methods and tools

e'LivingLab has customized the Project Management Institute Book (PMBok) methodology, including Agile version, to manage the different projects implemented in its living lab using ideas generation activities such as Hackatons, Open Calls and challenges based on multidisciplinary teams (involving users).to provide sustainable solutions suitable to becoming future business initiatives,

e'LivingLab of Espaitec Science and Technology Park of Universitat Jaume I is becoming a relevant open innovation and co-creation agent in Castellon Province. An ecosystem where a myriad of different actors are participating: the university community (students, researchers, staff), SMEs, local governments and citizens). e'LivingLab is an ideal hub to interconnect all the elements that foster the competitiveness through open and user-driven innovation.



Forum Virium Helsinki

Helsinki, Finland

HOST ORGANISATION

Forum Virium Helsinki is an innovation unit within the Helsinki City Group. It drives new digital service and urban innovation piloting in cooperation with companies, the City of Helsinki, other public sector organisations, and the citizens. The aim is to create better and novel services and new business, plus to open up contacts for international markets.

**FORUM
VIRIUM
HELSINKI**

Forum Virium Helsinki (FVH), an innovation cluster for open digital services, was founded in 2006. During the years, FVH has matured from leading technology inspired development projects to fully-fledged city development and living lab organisation. The operating model of Forum Virium Helsinki is based on user-driven open innovation. Based in Helsinki, FVH works both locally and globally, having a strong role in European-wide collaboration networks. According to FVH's operational principles, cities around the world should benefit from digital services built together on shared platforms.

Example Projects

Smart Kalasatama Living lab

Smart Kalasatama initiative aims to turn Helsinki's new area under construction, Kalasatama, into a world-class model district of smart urban development. The Smart Kalasatama Living Lab drives innovative co-creation of smart infrastructure and services. This centrally located old harbour area is



developed flexibly and through piloting, in close co-operation with residents, companies, city officials and other stakeholders. The vision of Kalasatama is to become so resource-wise that residents will gain an extra hour of their own time every day. A key role of the living lab is to find system integrators to drive co-designing and testing of new Smart City solutions such as smart metering, smart waste services and Internet of Things LANs serving sharing economy in residential buildings. The Living Lab drives Innovator's Club network programme as well as an Agile piloting programme (for SMEs, NGOs), which provide real life test environment and small funding for smart service prototype testing.

The Six City Strategy (6 Aika)

Forum Virium was initiating the formation of the Six City Strategy – Open and smart services and is hosting its strategy office. It is a strategy for sustainable urban development carried out by the six largest cities in Finland: Helsinki, Espoo, Vantaa, Tampere, Turku and Oulu. The strategy will be carried out between 2014 and 2020 with the aim of creating new know-how, business and jobs in Finland. The strategy is a

part of the implementation of Finland's structural fund programme for sustainable growth and jobs 2014–2020. The Six City Strategy has three focus areas: open innovation platforms, open data and interfaces, and open participation and customership. The Six City Strategy takes the urban living lab work to a strategic level: to create common models to enable interoperability between the cities and increase the utilization of living lab approaches in urban innovation work.

Open Data and Increased Transparency: Helsinki Region Infoshare and Open Ahjo

Forum Virium Helsinki has been at the forefront of the open data movement over the last years, most obviously through the Helsinki Region Infoshare (HRI) project and its mission to open up public data from the Helsinki region to everyone. The Helsinki Region Infoshare (HRI) project has received many innovation prizes, for example the 100.000 € European Prize for Innovation in Public Administration from European Commission in 2013. The HRI project is a joint initiative by four cities in the Helsinki Metropolitan Area. Since 2014, the HRI project has been integrated as a part of the City of

Helsinki's daily operations and functions. Currently FVH is driving the further development of the open data services using living lab methods and focusing on stronger engagement of companies and citizens.

Select- Cities as large-scale Internet of Everything Labs

Forum Virium Helsinki is driving a European programme Select with Cities of Antwerp, and Copenhagen. Together they propose an innovation challenge for European companies: how can the cities reinvent themselves as linked and large-scale Internet of Everything labs, with an easy access to developers and innovators to pilot, test and validate their solutions? SELECT for Cities innovation challenge lies in developing an open, standardised, data-driven, service-oriented and user-centric platform that enables large-scale co-creation in addition to testing and validation of urban IoE applications and services. This approach will allow the design, research and development of cities as linked and large-scale

IoE labs. Thus, Select programme utilises living lab approaches in all the cities involved.

Living Lab methods and tools

Forum Virium Helsinki Living Lab follows the quadruple helix principles by bringing companies, civil servants, academia and citizens to seek novel solutions for urban challenges. Key methods utilised are:

- Providing systematic programs and processes for agile service piloting and prototyping in real life context
- Organising open challenges (addressing specifically developer communities and citizens)
- Providing different forums (events, virtual spaces, workshops, programs) for multi stakeholder ideation and conceptualisation of smart city services
- Active user/citizen involvement using a variety of service design, user centric design and ethnographic methods

Forum Virium Helsinki, a founding member of ENoLL, is an innovation hub of the City of Helsinki. FVH applies citizen-centric methods and brings the city, companies, researchers and residents to co-operate in urban smart development. Forum Virium Helsinki:

- **Speeds up open and smart city initiatives and innovation in Helsinki**
- **Actively works for agile and smart cities joint-development and interoperability in Finland and in global networks**
- **Leads, initiates and participates in multi-stakeholder innovation projects locally, nationally and internationally**



Future Lab Living Labs of Poznan Supercomputing and Networking Center

Poznan, Poland

Living Labs of Poznan Supercomputing and Networking Center (Future Lab) include the following living laboratories: future education lab, social e-inclusion, human-computer interaction, digital immersion, cultural heritage, telerehabilitation and media lab 3D.

Future Lab is located at 20 Zwierzyniecka Street in a newly refurbished (2015) 5-story tenement house in the very heart of Poznan, Poland. The Future Lab building is comprised of 2050 m² of space with 3 stories of demonstrational ICT laboratories and 2 additional stories of co-working space. On top of the above mentioned living lab and demonstrative spaces at PSNC's Future Lab disposal are 11 ICT applied research laboratories located at PSNC's seat (10 Jana Pawla II Street) which include European and National e-Infrastructure lab, ICT Integration Laboratory, Cyberspace Security and Critical Infrastructures Protection Laboratory, Green ICT Laboratory, Visualization and Interaction Laboratory, Virtual



e-Science Laboratory, Laboratory of Telemedicine, Software Services Laboratory, ICT-ambience Integration Laboratory and the Laboratory of Voice Interfaces for Next Generation Services.

Living lab environments are mostly simulated in situ. However, at advanced stages of product development, testing is done in users' natural environments. On this account, PSNC's Future Lab collaborates with user organisations, such as hospitals, educational organisations and NGOs whose original locations can be integrated and used in project activities. Engagement of user organisations in living lab testing enables access to users' real-life environments and infrastructures to increase the accuracy and reliability of feedback.

All laboratories are fully equipped; they have broadband Internet connection granted by the PIONIER network and reliable access to considerable supercomputing power.

Projects

Wielkopolska Center of Telemedicine

This project focuses on improving the availability of specialised medical services and quality of treatment in the Wielkopolska region – mainly testing of a medical teleconsultation platform operating on PSNC's infrastructures. The platform enables physicians to carry out individual teleconsultations with other units, e.g. Clinic of Trauma Surgery, Treatment of Burns and Plastic Surgery in Poznan. The project engages a total of 26 hospitals in the Wielkopolska Region.

EduLab

EduLab is a set of disruptive projects realised in an educational space, where panels of pupils, educators and ICT researchers are immersed in the world of experimentation, search and discovery by means of cutting edge technologies, such as: Advanced display systems, Internet of Things, augmented

reality, educational games, programmable robots, etc. The Edulab enables the test-run of lessons in a futuristic educational collaboration space. It also opens many paths to research on e-skills and teamwork.

Living Lab methods and tools

On an on-going basis PSNC's Future Lab animates communities in the following areas: medical white staff, carers of the elderly and disabled, educators, technology-oriented user groups. To secure user retention, Future Lab attracts users by organising events and competitions with more than 100 events organised annually.

Future Lab includes a 24/7 co-working space, around which proactive communities convene: medical staff, the elderly, educators, and technology-oriented user groups.

In addition to this PSNC coordinates the leading Polish ICT cluster, which connects more than 100 paying members, whose engagement in Future Lab is crucial.

In relation to ICT application development, a new panel of users is being constructed and animated for every specific project and context to identified usage scenarios and solution features. Panel duration is normally limited by the duration of Research and Innovation action (1 to 3 years), but preserving the panel for future engagement is considered good practice and can definitely support the sustainability of the developed product or service once commercially launched.



A photograph of a surgical room. In the foreground, a patient is lying on a surgical table, covered with a white sheet. To the left, there is a large medical monitor displaying a blue screen. In the center, a surgeon in blue scrubs and a white cap is standing with their back to the camera, looking at a computer monitor. The room is filled with various medical equipment, including a large overhead surgical light, a mobile cart with multiple monitors and equipment, and a blue storage unit. The walls are light blue and yellow.

Future Lab is a community driven and interdisciplinary collaboration space, where open-minded innovators use PSNC's advanced ICT infrastructure and laboratories to facilitate co-creation of disruptive ICT-related solutions. Additionally, via the Future Lab, PSNC shares and exchanges its experience from 100+ projects (and within it 70+ Framework Programmes).

Guadalinfo Living Lab Network

Andalusia, Spain

HOST ORGANISATION

Consortium “Fernando de los Ríos” is a public entity located in Granada and is in charge of the deployment and development of ICT policies for the Information Society and Knowledge development in Andalusia.



SOCIEDAD DE
LA INFORMACIÓN Y
EL CONOCIMIENTO

Guadalinfo is a living lab network managed by the Consortium “Fernando de los Ríos”. Guadalinfo is a digital network with a strong territorial support: over 800 Public Access Points to the Internet located in municipalities under 20.000 citizens and deprived urban neighbourhoods all over Andalusia, Spain. Nowadays, Guadalinfo has over one million registered users and has already generated more than 1.700 citizen-based innovative projects in fields such as tourism, employment, training, inclusion, environment, Web 2.0, sustainability, accessibility and culture. Guadalinfo works in





Users of a Guadalinfo telecenter
© Consorcio Fernando de los Ríos

an open and collaborative way in the detection and promotion of talent and ideas emerging from citizenship.

Guadalinfo represents a commitment to social empowerment of all Andalusia's citizens, attending primarily to those disadvantaged social areas: the unemployed, people in risk of social exclusion, etc. Guadalinfo is presented as a social network that reflects the new era where Andalusia is opened to the world and connects to create new networks. The Internet is the stage where citizens share knowledge and

projects are developed. Guadalinfo itself is the vital and innovative Andalusia, the Andalusia on the Net.

According to the characteristics of Guadalinfo and the living labs categories, it can be assumed that Guadalinfo corresponds to an "Enabler-driven" living lab. Main areas of work in Guadalinfo are: social innovation, education, smart cities, digital literacy, digital skills, digital jobs, tourism and culture.

A living lab network composed of more than 800 Public Access Points to the Internet and facilitators promoting and encouraging social innovation and digital skills among citizens

Example Projects

Innycia

The project is about developing an innovative ideas environment that supports and boosts promoters owning innovative ideas. Through the platform, promoters are encouraged to evolve their idea into a social innovation project following a proven social mentoring methodology where promoters, mentors and experts establish a relationship. To build the social innovation project, promoters are required to complete 20 missions in a gamified journey helping to construct a project plan. Once the project is accepted, it is included in a second stage called Project Resources Environment, where projects are enhanced and launched through resources in four main areas: social media, funding, technology, and advanced skills in learning and creativity. In this resources environment a crowd-funding platform to support projects is also included.

Digital Competence

Guadalinfo offers a model of Digital Competence training adapted to the European Framework of Digital Skills (DIGCOMP), allowing users to acquire the knowledge, skills and attitudes needed to do a safe and critical use of new technologies. This project is being developed in different phases:

- Analysis of the current situation regarding digital skills and adaptation to DIGCOMP.
- Adaptation of European Framework to our training model.
- Development of training content and self-diagnostic tools.
- Digital Competence training for our team of Innovation Local Agents of the Guadalinfo telecenters.





iMinds Living Labs

Flanders, Belgium

HOST ORGANISATION

iMinds is Flanders' digital research & entrepreneurship hub. The organisation drives innovation for society and economy, through strategic and applied research on digital technologies. Its 900+ researchers collaborate with industry and SMEs in cooperative research projects. iMinds also helps entrepreneurs start and grow their digital businesses.



iMinds Living Labs is a founding member of ENoLL iVZW and runs one of the largest known Living Lab teams in the world. It engages all stakeholders in lean and structured innovation projects which deal with (in)validating all assumptions regarding the digital innovations in development. This data-driven approach is implemented using an internally developed business innovation methodology, user research methods, prototyping approach and panel management processes.

iMinds Living Labs' track record and experience are built on a decade of pioneering work and has two general focus areas, aiming at breakthrough living lab research:



1. Bilateral, company-driven projects in which iterative research steps provide insights on creating products and services which are optimally aligned with the intended users' needs. This way, new product introduction can be optimized by reducing risk and supporting company growth.
2. Large scale, quadruple helix smart city pilots in which cities, enterprises, SMEs, entrepreneurs and end-users collaborate in projects with high economical and societal impact. In this context, iMinds is an experienced coordinator in multiple CIP programs such as Apollon, EPIC, ECIM and Specifi.

To accommodate living lab projects, iMinds participates in a number of living lab constellations, like City Of Things, an

IoT-centred Smart City platform involving the City of Antwerp, its major IT service company and a local telecommunication company providing access to a city-wide IoT architecture, as well as large scale user panels to experiment with new digital and complex services.

Example Projects

SPECIFI/Creative Ring

By involving artists, citizens, city administrations and companies (both large and small) in developing new applications, services and performances using Future Internet platforms, the CIP project SPECIFI implemented pilot projects in three regions (Flanders, Catalonia, Trento) and was able

to demonstrate the key weaknesses of the European Creative Industries: fragmentation and isolation. This can be overcome by connecting and empowering local and regional Creative Hubs and SMEs in a Creative Ring, also involving local Living Labs, Smart Cities and their surrounding regions. Most resulting applications have been picked up by the Creative Ring and are being deployed in new cities around Europe, while the Creative Ring itself is becoming a sustainable platform open to new Hubs and Cities.

newScores

neoScores is a Flemish start-up aiming to digitise sheet music and scores for both professional and hobby musicians. They partnered with iMinds Living Labs in order to map user needs and expectations, and co-create their applications. The living lab approach has been used to co-create and test a self-service model for easy distribution of digital sheet music and neoScores gives musicians the opportunity to simply and securely purchase scores while using their app to share notes with fellow musicians. neoScores was awarded one of the 12 best European start-ups, during the Tech All Stars competition 2014 and the start-up secured an investment of 2 Million Euros in July 2015.

Mobile Vikings

Mobile Vikings is a strategic partner of iMinds, and has been executing projects since 2009 with iMinds Living Labs. They're a grassroots virtual telecommunications operator convinced that user co-creation is the best way to exploit the value of ubiquitous Internet access. In order to support their innovative business model, Mobile Vikings in collaboration with iMinds

Living Labs to building a platform that uses big data analytics to enable highly-targeted communication, all while putting users' (location) identity and privacy centre stage. The project resulted in a unique (location) privacy and identity management framework controlled by the user, called "Own your own data" and laid out the foundation of the Antwerp 'City of Things'

Living Lab methods and tools

iMinds has pioneered in adapting and creating lean and agile processes to integrate living lab insights in companies' development roadmap, from idea to marketable product. This new paradigm allowed companies to focus on problem solving and user needs by implementing data-driven trial-learning processes, rather than the classic waterfall approach.

iMinds Living lab research includes us through the innovation process. This approach addresses thresholds and challenges such as:

- **Transforming ideas into prototypes in their daily context.**
- **Shaping '(minimum) viable products**
- **Designing business models through and go-to-market definition.**

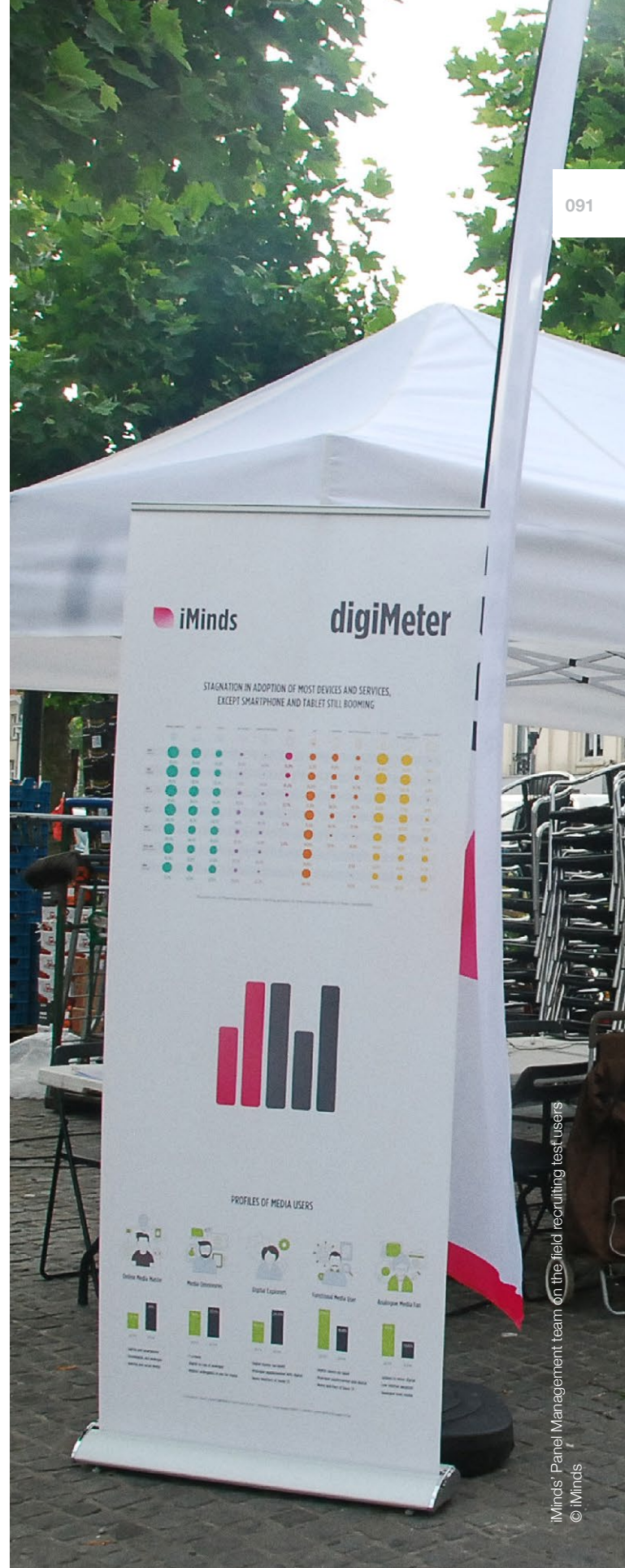
In every trajectory, iMinds Living Labs assembles a customised mix of research methods and tools, based on the concrete requests and needs of the project instigator. Each project is therefore characterised by: a multi-method research design, a real-life intervention and active user involvement during the project.

iMinds Living Labs currently offers +50 Methods and Tools, some of which have been developed based on iMinds' years of experience in the field: LLAVA, the Lead User toolbox, PanelKit software for Panel Management, Rapid Prototyping techniques, in-situ observation tools (eg wearables). Recently, iMinds Living Labs has also developed a set of tools and workshops aimed at transferring methods and knowledge to organizations on Living Labs, referred to as Living Lab Academy.

users and stakeholders early on and all approach provides a solution to innovation

users can interact with

**' through an iterative, agile process.
stakeholder analysis**



i2CAT Living Labs

Catalonia, Spain

HOST ORGANISATION

The i2CAT Foundation is a non-profit research and innovation centre and a living lab in itself. As research centre promotes mission-oriented R+D+I activities on advanced Internet architectures, applications and services. As a living lab, the centre was already designed back in 2003 as a public-private partnership between the regional government, the city of Barcelona, the universities and the companies, supporting a user-centred research and innovation model.



i2CAT was recognised by ENoLL in 2006 as the first Catalan and Spanish living lab. Since then i2CAT has played a pioneer role developing the living lab movement in the country and helping other local organisations to become members of ENoLL (22@, Tecnocampus, Citilab, Guifinet, BCNlab, UAB SmartCampus etc.) finally leading the Catalan Network of Living Labs, Catlab.

The i2CAT Living Lab Unit is the group within the i2CAT foundation in charge of helping to define the Quadruple Helix i2CAT model and strategy, helping to promote the living labs



approach across the whole research and innovation areas of the organisation, and finally designing and promoting new living labs in Catalonia.

i2CAT research program is focused on designing living lab theories and methodologies. Internet is allowing the explosion of an enormous variety of labs. The Collaboratory is a general hypothesis about possible worlds of community or citizen labs organised as segmented, polycentric and integrated (SPIN) networks. This citizen-driven innovation model can open and change the current innovation systems. Augmenting

the knowledge about a possible new European Union model based on a network of complex living labs is a general hypothesis i2CAT is exploring from current deeds and data. They consider living labs as a new “social high tech” or “synthetic social science” complementing other design disciplines like computer science and technology or synthetic biology as combining living labs and ICT theories and procedures can help to elaborate new visions about the digital societies as knowledge societies.

Example Projects

094

Citilab.

Since 2006 i2CAT has been collaborating with different organisations in the region trying to implement open living labs. In particular, Citilab has been recognised by the European Commission as a good example of a social digital innovation (Guide to Social Innovation, 2013). Having more than 7,000 citilabers registered, this organisation in metropolitan Barcelona has pioneered in building an environment focused on the citizen, trying to help them in the learning process to innovate using different tools (programming tools like Scratch, project-based learning methods, participatory design training etc.). The Foundation is composed by a 4H partnership between the city of Cornellà, local companies like Siemens, the UPC and citizen representatives. The project has suffered a difficult period during the economic crisis but it has survived being one of the good examples of citizen-based living lab in Europe. Currently Citilab is playing a key role in promoting citizen-driven smart specialisation strategies based in the collaboratory model with other cities and NGOs in Baix Llobregat, one of the main industrial areas in Catalonia.

BCN LAB

Barcelona laboratory (BCN Lab) is the result of a partnership between i2CAT and the Barcelona City Council's Institute of Culture (ICUB). BCNLab's mission has been to promote and establish connections between persons, communities with ideas or creative projects in the areas of technology, science, creativity and culture in the city of Barcelona. Started in November 2012 in the vibrant neighbourhood of Sant Andreu del Palomar, BCNLab has deployed a set of projects and activities like the generation of the local community of citizen science or putting in place the new office of creative technologies, gathering partners from universities, entrepreneurs, local officials, schools, artists and citizens. Trying to realise the hypothesis of a city as an open living lab, this project is entering now its second phase, focusing in the different neighbourhoods of the big city, generating district living labs, anchoring the user centred innovation approach in each of the neighbourhoods of BCN, establishing a deeper collaboration with other living labs in the metropolitan area like Citilab, Neapolis and UAB SmartCampus.

Industrial Ring 4.0

i2CAT Foundation is promoting the Quadruple Helix model in the Catalan innovation system. The organization has become a key actor in defining strategic projects for the RIS3CAT, the regional innovation strategy of Catalonia until 2020. The Industrial Ring 4.0 launched in September 2015 is another projects trying to generate a "collaboratory", between the strategic industrial sectors of the region, the ICT companies and research centres. Starting from a previous experience of an industrial ring in the automobile industry, the current project will use a living lab approach in the digitalisation of the regional industrial sector, in collaboration with other similar on-going platforms in Europe (FITMAN, Virtual Fort Knox, etc.) and the German Network of Living Labs, mostly focusing on industrial companies.

Living Lab methods and tools

The i2CAT innovation program develops projects and pilots trying to validate the "collaboratory" hypothesis deploying experiences, methodologies and perspectives of user-centred open innovation ecosystems. One of the methods i2CAT uses is Ethnographic Futures Research (EFR), that builds upon ethnographic knowledge but systematically asks questions about possible, probable and preferable futures (Textor 2005). i2CAT works with a huge range of stakeholders, within a public-private-people partnership, trying to provide solutions and cooperation in areas such as health, education, social innovation, smart cities and regions, service design, etc. In that sense, Citilab has developed the 3H methodology for "user engagement". This methodology combines a Head, Heart and Hands on approach to generate understanding, community and commitment in the user community to facilitate the co-creation process.



Krakow Living Lab

Krakow, Poland

HOST ORGANISATION

Krakow Technology Park plays a key role in the development and growth of the local economy in the context of ICT technologies and e-driven solutions, supports directly over 100 companies and start-ups (incubators, accelerators, tenants) and it is one of the key actors in co-creating and implementing the Regional Innovation Strategy and user-driven innovation approaches in the region



KRAKOW
TECHNOLOGY
PARK

Krakow Living Lab (KTP), hosted by Krakow Technology Park and developed under a signed agreement with the City of Krakow is aimed to support companies in product and service development in the scope of smart city solutions. It is a participatory driven process of designing city infrastructure and functions including the city's ICT ecosystem.

The ultimate goal and main challenge is the development of innovative user-centred public products and services to increase the quality of life within different domains (people, living, mobility, e-governance, economy, environment). These are all crucial in fostering economic growth and shaping the competitiveness of companies.

Krakow Living Lab began cooperation with ENoLL in September 2013 and became an officially labelled living lab in August 2015. Krakow Living Lab, as one of two active living labs in Poland, is a pioneer in setting new approach in product or service development in the region.

Krakow Living Lab is actively using a regional eco-systemic





Malopolska Information Technology Park
meeting with start ups
© Krakow Living Lab

approach to innovation, based on the quadruple helix model involving in each initiative stakeholders and users from all four areas (research, industry, public administration, and citizens) focusing on the co-creation of innovation through a citizen-driven approach. Products and services are tested in real life environments and focus group interviews are undertaken to ensure a high communication standard.

Example Projects

Open Data and Increased Transparency:

The road map of opening data in Krakow with defined stages, a clear process of opening data and involvement of stakeholders has been identified within the SMART_KOM Strategy. Krakow among other Polish cities is one of the first pilot cities to start an open data process. Krakow Open Data Platform tool is to be tested within Krakow Living Lab.

The Smart City adaptive model created under “SMART_KOM.

Krakow in smart cities network” project is a joint Smart City Strategy for Krakow and 14 communities within Krakow Metropolitan Area (Krakow in smart cities network). The basic idea behind the initiative is to equip the city and metropolitan region with the tools of new technologies (e.g. ICT, ITeS), which will increase citizens’ influence on shaping the development of the city and metropolitan area.

Empowering innovators and optimising products and services:

Some of the example products and services dedicated to citizens have been tested under Krakow Living Lab umbrella are: Micropark, Apps4Krk and CivilHub platform

Micropark consists of modular components attached to each other, based on a grid. It is a green platform built of wooden material to improve the quality of public space in dense urban environment, providing citizens with different opportunities for leisure in small areas and to improve the

quality and aesthetic greenery in the space of squares or streets. Based on outcomes and recommendations five other Micoparks were built for one of 14 communities in the Krakow Metropolitan Area.

Apps4Krak is an independent Internet service, which presents mobile and web applications addressed to the residents of Kraków and applications developed by developers based in Kraków. The main objective is to create a database/catalogue of the applications, which in long run, will increase the demand for applications about the city and stimulate the growth of start-ups. It is also a platform where local community developers can benefit from each other and build new partnerships to increase competitiveness. As a tool for creating demand and supply it gives a space for the interaction between developers, designers, engineers, artists and the users of mobile applications in Kraków.

CivilHub is a platform run by a non-profit organisation that creates a place where citizens work together to make cities, settlements and countries a better place. It is an active and adaptive tool to strengthen the citizen's involvement by using ICT in decision-making processes that influence their life.

Living Lab methods and tools

Krakow Living Lab, as a newly established entity, has undertaken several initiatives to support local business ecosystem to speed up the innovation process from the idea to product or service launch. The living lab methodology is quite fresh in the Polish region and demands deep and wide understanding not only of requirements and principles but of ways of working and expectations of customers and users as well. Nowadays they seem to belong to different worlds. The UX driven process of introducing products or services is essential to provide effective, efficient and tailored feedback to local businesses if they want to act locally but win globally.

The activities run under Krakow Living Lab have been developed covering groups of researchers dedicated to target groups of potential clients, end and heavy users. Specific scenarios using appropriate methodological tools have been defined case by case in close cooperation with companies and consisting of mainly on business coaching combined with social consumer research and an iterative process from concept through prototype, ending with the implementation of the requirements.



Laurea Living Labs

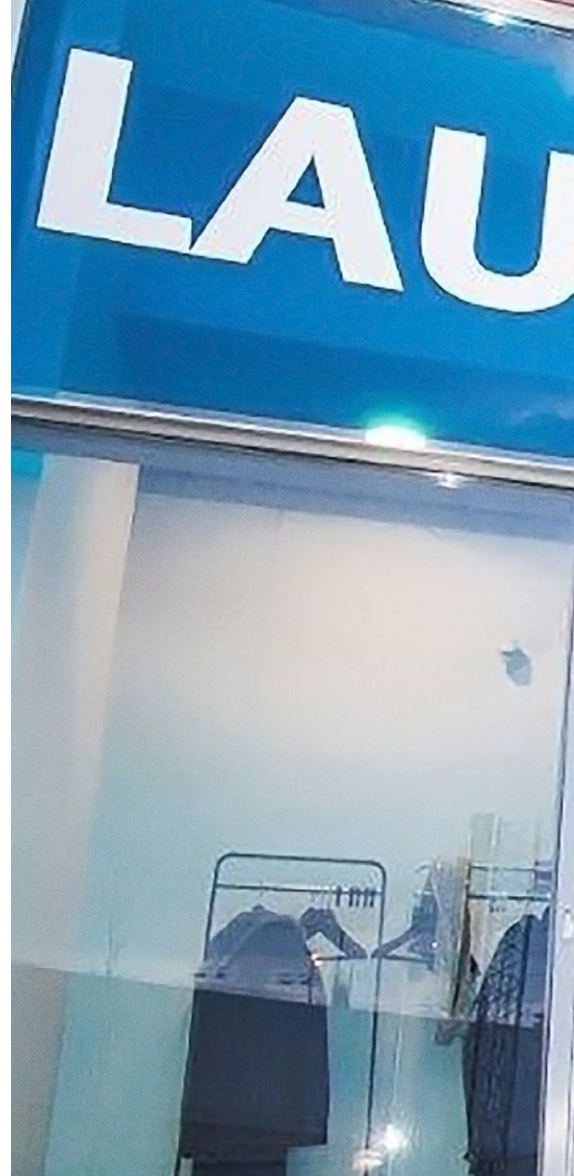
Espoo, Finland

HOST ORGANISATION

Laurea University of Applied Sciences is your access point to the Helsinki metropolitan area, which is one of the most competitive areas in the world. By using Service Design approach and methods we co-create value with our national and international partners. Our international research portfolio (50M€) and multidisciplinary research team with more than 100 PhD holders supports cross-border innovation co-creation, piloting, validation and commercialisation or innovation diffusion throughout dozens of countries and cities all over the world.



LAUREA
UNIVERSITY OF APPLIED SCIENCES
Together we are stronger



The Laurea Living Labs Network (ENoLL member since 2007) enhances both social and business innovation covering numerous needs from micro to the most macro level. Consequently, Laurea is an innovation and entrepreneurship hub which has operated for 25 years both in temporary and permanent development environments such as Active Life Village (former Well Life Centre), SID BarLaurea, Laurea Health Hub, Smart Hospital Living Lab, the Care Innovation and Design Hub (CIDEI), the User Driven Innovation Centre (Unic), the Medical and Care Simulation Centre, the Service Innovation and Design Labs (SIDLabs), Security Lab, Futures Lab CoFi and Laurea Spinno Incubator.



Laurea Living Lab spaces and team members
© Laurea Living Lab

Example Projects

In phase with the Smart City development, Laurea aims to enhance international reference platform development in the fields of health and wellbeing, coherent security and digital services.

Health Capital Helsinki together with Living Labs and networks creates a unique research, development, testing and commercialisation environment for biotech, pharma, medtech and digital health with apps. Its network covers cities, hospitals and over 9,000 businesses. The goal is significantly to increase the number of jobs, revenue and co-development in the

Helsinki metropolitan region and also to attract investments and foreign companies to its network.

Laurea Health Hub promotes individual health and wellbeing, productivity within social services and health care, availability and influence of services and supports the production and spread of commercial hit products on an international scale. Laurea's "Co-created Healthier Uusimaa" project coordinates Helsinki-Uusimaa Smart Specialisation strategy's priority of Human Health Tech.

The Care Innovation and Design Cluster (CIDE) projects enables a real life co-creation and test environment (e.g. a



home, hospital, day care centre, service house, home for the elderly) for partners' products and services as well as a learning environment for health care and social welfare professionals.

The WeLive project is devised to transform the current eGovernment approach by facilitating a more open model of design, production and delivery of public services leveraging on the collaboration between public administrations (PAs), citizens and entrepreneurs. WeLive delivers next generation personalised user-centric public services.

The Smooth Border concept for fast access and travel facilitation with improved risk management has a suit of tools and methods, from technological maturity analysis to end-user engagement and business opportunities identification. A smooth border approach provides a tentative roadmap of the EU Smart Border Initiative and it can become a model for border crossing processes.

Living Lab methods and tools

Laurea has understood the pedagogy, regional development, and research, development and innovation (RDI) tasks of a Higher Education Institution as an integrated whole right from the beginning. This approach contributed to the development of the Learning by Developing action model.

Ethnographical methods, participatory observation, participatory service design methods, design games, design probes, facilitated co-creation workshops, tangible 3D-prototyping, interviews and focus groups methods are applied in living labs projects in the area of Service Business (e.g. HLL, Finlab, UDOI, MUMA, KOULII, CoCo), Health Care (e.g. CaringTV Programme, Going Home, E2C, COM'ON, MORFEUS), Security (e.g. Saterisk, Mobi, Macico) and Entrepreneurship (e.g. Saterisk, Mobi, Ballad, Spinno incubator).

The Service Logic Business Model Canvas is an easy-to-use tool including both the company's viewpoint (value capture)

Together Health Capital Helsinki and Laurea's Living Labs and networks create a unique research, development, testing and commercialisation environment supporting Finland and Helsinki's vision to make Helsinki one of the leading innovation hubs in Digital Health. Finland's long history of digital innovation, the world's best resources in digitalised health data, unique skillsets, huge engineering talent pool combined with great healthcare resources and a Start-up buzz enables Laurea to actively pilot in a public healthcare setting to validate the population health impact of digital health solutions. Come and join us to leverage the great momentum and business opportunities in Digital Health.

and its customer's viewpoint (value creation). This tool makes managers and developers systematically consider both viewpoints in each element of the business model, and thus it helps companies implement customer-centred strategies focusing on customer value-creation. More than 100 persons and 70 companies have been involved in the development process of this tool (read more in Ojasalo & Ojasalo 2015).

People Value Canvas: reflecting on value

Laurea connected the People Value Canvas (PVC) closely to the logic of the Business Model Canvas. Working on PVC ensures the foundation of an effective, and economical sustainable solution. The understanding of people is the key to PVC. The overall output of PVC is a value proposition, which is the starting point of the Business Model Canvas.

The CoCo Tool Kit is a collection of five tools and a workbook that is designed to support service businesses in adapting co-creation activities.

Smart City Istanbul Living Lab

Istanbul, Turkey

HOST ORGANISATION

Istanbul Metropolitan Municipality (IMM) holds a very important place in local administration organisation of Istanbul. Its area of responsibility encompasses the entire provincial territory, which spans a total area of 5,343 km². IMM has 28 municipal enterprises, 2 subsidiary public utility corporations (Transport Authority and Water & Sanitation Authority) and more than 70.000 employees in total. It is responsible for wide variety of areas including environment, natural-gas supply, energy, infrastructure, planning and development, IT, transportation, community services and vocational education, health-wellness, food & catering, culture, tourism etc.



Creating a smart city requires highly skilled people with innovative and creative thinking. In order to reveal innovative and creative thinking, an open platform where users and developers come together to develop innovative products and services facilitating life of people and contributing to being smart city is necessary. In this regards, Smart City Istanbul Living Lab fulfils this expectation in Istanbul and aims to extending living labs in Turkey by serving as a model.

Example Projects

Full Adaptive Traffic Management System (ATAK)

Full Adaptive System is a work system where new durations are implemented in real time by optimising signalised intersections' plan durations based on parameters such as traffic volume and tailing in order to minimize the average vehicular delay times and average stoppage numbers. It is



developed by ISBAK (Istanbul Transportation Telecommunication and Security Technologies Industry & Trade INC, an affiliate company of Istanbul Metropolitan Municipality.

Traffic Control Centre (TKM)

Traffic Control Centre is an important factor in solving the transportation problem of cities and a main component of traffic management. With TKM (Traffic Control Centre) continuity of traffic flow, effective use of road network capacity, monitoring of traffic 24/7 in real time, controlling and managing these from one place is possible. It is executed by Traffic Directorate of Istanbul Metropolitan Municipality

IMM Traffic App

IMM Mobile Traffic App is the mobile application that allows people to access real time traffic information via mobile phone. With this program guiding the passengers in the city and

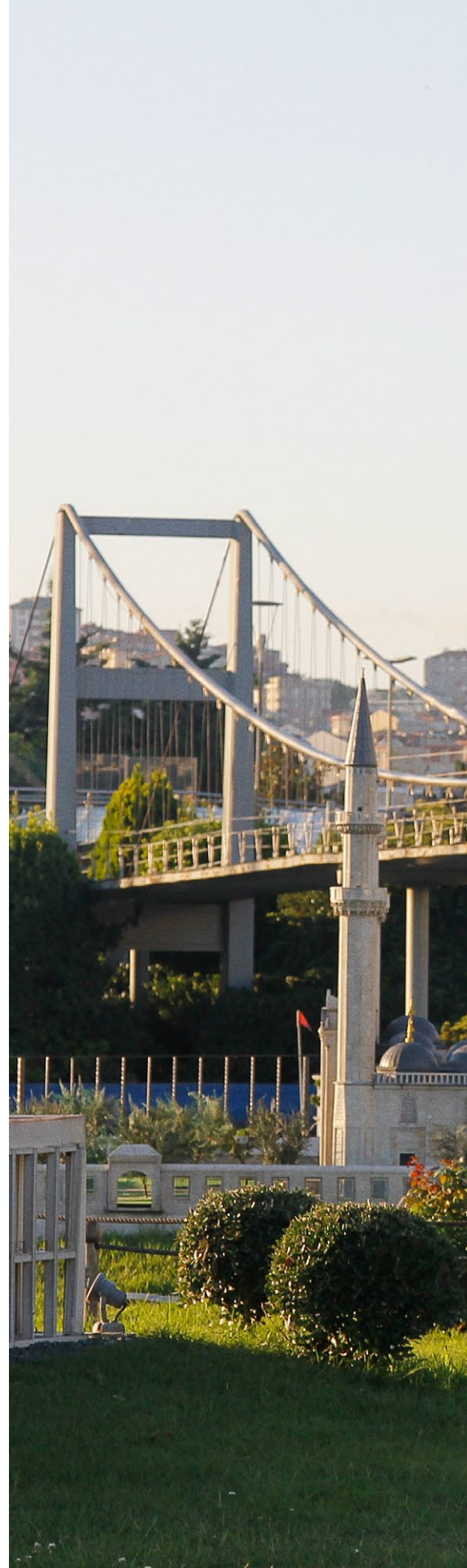
providing them with alternative routes according to the traffic density, the users can view the traffic with their cell phones in real time and they can display the Traffic Density Map prepared with the information supplied with traffic measurement detectors to learn about the real time density.

Living Lab methods and tools

The main focus is to create a living environment for users and different sectors of society in order to reveal their innovative ideas by collaboration of public-private sectors and users. In this context, Smart City Istanbul Living Lab represents an open platform for public-private sector and users with a mutually accepted goal: to increase life standards of society by taking into account the needs of users and sectors in the city regarding research and technological development. What makes SCILL unique is to have such a big open laboratory

in Istanbul committed to research and development. The urban solutions produced in SCILL can be a model for other cities. The method of revealing innovative ideas is based on co-creation by multiple actors such as universities, citizens, companies, research institutions, SME's, NGOs, experts, public institutions etc. SCILL also presents experimentation lab for products and services suitable for the needs of urban solutions. The main topics the SCILL focus are transport, ICT, energy, environment and health.

Istanbul, the opening gate of Turkey to the world, has ambitions to be the technology hub of Turkey. With the vision of creating a leading and sustainable city alongside high quality of life and unique heritage, Istanbul is pioneering city of Turkey in which research and development, innovation and technological production is intensively supported and invested.





Taiwan Living Lab

Taipei City, Taiwan

HOST ORGANISATION

Institute for Information Industry (III) was incorporated in 1979 as a Non-Governmental Organisation (NGO) through the joint efforts of public and private sectors, to support the development/applications of the information industry as well as the information society in Taiwan. Since its inception, III has been a source of vision, innovation, technological excellence and a major contributor to Taiwan's development into a significant player in the global ICT area. Besides technology advancement, III's mission has evolved from Information Technology (IT) to Information and Communication Technology (ICT) development with a wide social coverage.

**Living
Lab**



Taiwan Living Lab, located in Songshan District of Taipei City, was launched in 2008 with the aim of promoting open innovation in real live environments. It is operated by Innovative DigiTech-Enabled Applications & Services Institute (IDEAS), III. The networks of Taiwan LL offer greater opportunities for innovators to understand users' demands/feedbacks, and create sustainable business models that can scale up successfully. Taiwan LL places its emphasis on developing and testing innovative solutions in service industries such as finance, health care, e-learning, logistics, tourism, and



Taiwan Living Lab hosts an afternoon tea event to gather users' feedbacks of ComCare (senior home care service)
© Taiwan Living Labs

e-commerce. Combining resources from different stakeholders in the service ecosystems, researchers in Taiwan LL are actively designing and developing innovative business/service models to help the industry partners to fully exploit ICT in their business operations, and thereby enrich the user's quality of life through digital services. Leveraging the resources of technology, research and application development capability of Ill, Taiwan Living Lab is one of the best places to design, test, and verify service/business models of innovative ideas in Asia.

Example Projects

ComCare Health Service

ComCare is a service platform driven out of years of research to meeting the growing needs of the aging population. ComCare is a health service supporting tele-health, public health, and social sharing. It enables users to record daily physiological data, easy retrieval of health information, share photos, schedule personal calendar, get information from



community broadcast channel and provides access to remote medical consultations. It easily connects diverse types of measuring devices wirelessly, and the service is accessible on mobile devices. More than 5,000 people have used the ComCare service around Taiwan, and the satisfaction rating is over 80%.

InMedia Digital Signage

The project provided digital signage for Taipei International Flora Exposition, Taiwan Design Expo, Yilan International Children's Folklore & Folkgame Festival, Smart Bus Stops, factory tours and other large venues. In particular, the inMedia bus information station was a winner of the iF Communication Design Award 2012, proving that an empirical experiment involving signage services and the public at the same time can deliver real results for service optimization. The service has collected 3,000 user feedback questionnaires and 2 million records of usage statistics so far.

Living Lab methods and tools

Taiwan Living Lab have developed the Service Experience Engineer (SEE) methodology to lay the foundation for all user driven living lab innovation processes. The goal of SEE is to develop a user-centric multidisciplinary research approach to support ICT-based R&D activities and promote open innovations. Through the SEE approach, we design comprehensive service blueprints, select appropriate user groups, and design various experiments intended to test service models of PoC (Proof of Concept), PoS (Proof of Service), and PoB (Proof of Business). SEE methodology facilitates the development of new service prototype that helps business enterprises to adopt a design philosophy that emphasizes the user's experience, advanced ICT technology and seamless services.



Taiwan Living Lab promotes open innovation activities and provides a complete infrastructure that helps the industries in multiple sectors test new product/service applications. Our team members from different specialties (software engineering, service model design, statistics etc.) are available to support the living lab projects. In addition, the community users are also encouraged to co-create scenarios to participate in the living lab trials. Taiwan's pivotal geographic location and excellent infrastructure nevertheless offer an optimal strategic transit point for global companies seeking to enter the Asian market.

TAMK Living Lab

Tampere, Finland



HOST ORGANISATION

Tampere University of Applied Sciences is a higher education institution oriented towards working life and RDI co-operation. Our strengths are multidisciplinary education, creativity, and a strong international dimension.

TAMK Living Lab is a crucial part of the daily activities of the university. TAMK Living Lab is run by university teachers, researchers and students and is in close cooperation with the New Factory, Demola and Mediapolis innovation platforms; TAMK Living Labs offers their cooperation partners the possibility to experiment with the multidisciplinary living lab approach. Cooperation on large scale ensures that new innovations, research results, and proven operational models are incorporated into TAMK's educational framework for the benefit of future professionals. TAMK Living Lab is building new learning environments, where those in working life and students can meet each other to their mutual advantage.

Their activities are in four focus areas: new operational models for health care and social services, intelligent machines and



Seniors band, a new form of activity offering social interaction and experiences for elderly people © Tamk Living Lab

smart devices, energy-efficient and healthy buildings and entrepreneurship and innovative business.

Specific horizontal fields of expertise areas include social robotics, games technology and entrepreneurship. The cutting-edge competences and methodologies of these fields provide many possibilities to be combined with all other sectors in order to produce innovative solutions, applications and services.

TAMK Living Lab prefers to look two product generations ahead instead of looking at the product and service concepts that are nearing the end of their life span. TAMK's cooperation networks find and test new products and service solutions, and also implement them in real life settings. We find solutions

to everyday problems, and our service repertoire ranges from small student operated development assignments to large transnational projects. Especially small and medium size enterprises benefit from the complementing RDI knowledge and resources of TAMK's students and staff members.

Example Projects

Active Ageing in Tampere Region and in Europe Projects

End-user involvement in developing innovative, preventive senior services and operations models together with TAMK's education, seniors themselves and services providers. Education and development themes included, e.g. physical,

TAMK Living Lab's main goal is to help cities and municipalities, SME's and third sector organisations in our region to innovate with users. A good example of this is our Active Ageing in Tampere Region and in Europe projects.

psychological and social functional ability and a work approach supporting them, prevention of falls, increased utilisation of music and culture contents, elderly people's nutrition, increased utilisation of technology and assistive technology, early intervention in memory disorders and improve image and attractiveness of elderly care among future students. In addition Active Ageing in Europe project key themes were: use of culture, art and music in preventive services for elderly people, community spirit and participation of the elderly and communal living for elderly people.

Rapid Prototyping ®

Tampere University of Applied Sciences offers to companies and communities rapid and cost-effective way to find new solutions for example to develop new service concepts, product ranges and reach new client groups. Rapid Prototyping® – is a brand new multidisciplinary workshop concept developed by TAMK. It combines the expertise of the TAMK teaching staff with the open-minded approach of the students and end-user viewpoint. In the workshop (three days around the clock) student groups will develop a product prototype, service concept, a finished product or a service together with the company and their end-users.

Mediapolis

Mediapolis is a Finnish centre and network for content production and digital industries, offering customers a wide variety of production and development services. Mediapolis is a growing media ecosystem operating on an international scale. Mediapolis was launched in the autumn of 2014. Mediapolis currently hosts more than 30 companies and other organisations. The single largest group consists of

production companies, while the largest individual organisation is the Finnish Broadcasting Company (Yle). Together with companies in Mediapolis are two educational institutions providing media programmes, Tampere University of Applied Sciences (TAMK) and Tampere Vocational College (TREDU). Mediapolis offers opportunities and networks for testing and developing something new. Media research and innovation activities form an integral part of the Mediapolis community. Mediapolis organisations also have contacts with University of Tampere and Tampere University of Technology. The educational institutions share a mutual interest in research activities and projects aiming to create genuine, business-generating innovations. Mediapolis is also an easy place to operate, as well as to order and commission various media projects. All experts, devices and facilities required for projects are located under one roof.

Living Lab methods and tools

TAMK Living Lab exploits many methods and tools in creating new user driven innovations and solutions. TAMK LL focus especially on exploration and experimental phases of product and service development. Normally we start with our own Rapid Prototyping® workshop. Ideas, concepts and prototypes created during Rapid Prototyping® session can be further developed in co-operation with TAMK up until the launch of the new product or service. For this further development work and business model planning we use Stanford Research Institute's Five Disciplines of Innovation® process.

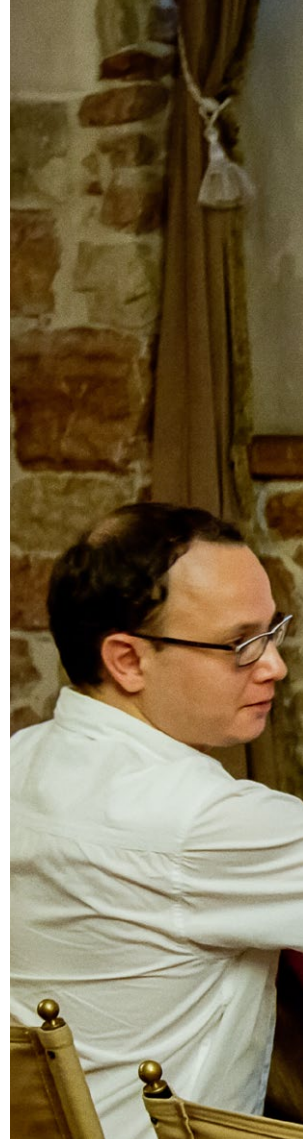


Trentino as a Lab or TasLab

Trento, Italy

HOST ORGANISATION

Informatica Trentina is an instrumental tool of the Autonomous Province of Trento to provide global solutions in the field of ICT for the public administration. Informatica Trentina plays an increasingly role of “economic policy instrument” for the development and growth of the local economy in the context of ICT e digital technologies, playing the role of catalyst in the Trentino regional innovation network.





Informatica Trentina, with the support of the autonomous Province of Trento jointly with many local innovation actors were successful in becoming a member of ENoLL in July 2010. The result of this was Trentino as Lab Living Lab or TasLab.

TasLab's objective is to promote user-driven innovation in Trentino's public administration, through innovative projects to be implemented in collaboration with ICT companies and regional research centres. TasLab's main objective is in the valorisation of research results (typically prototypes which focus on technological aspects), to finalise them for public administration services, where there is an attractive potential for application. The network is able to generate value for the region in terms of:

- innovative evolution of services for public administration, according to users' needs
- capitalisation of the research activities' results through user trials/pilots
- business acquisition of skills and know-how from research centres, resulting in increased competitiveness in local business

This activity requires a continuous monitoring of trends in local, national and international research and the creation of trial/pilots projects in collaboration with research centres, to test the feasibility of trial results in respect to the service for public administration.

TasLab supports the emergence of cluster and collaborative groups focused on a particular sector.

Some recent examples are the Semantic Valley Consortium



(focused on semantic technologies), the health services cluster group (which later became the “Health Innovation Hub” consortium) and the Open Data in Trentino initiative, in which companies, research centres and public administration participate.

TasLab has been a project partnering in European projects in the area of ICT and eGovernment. TasLab is supporting a Smart Specialisation approach to innovation and local growth, focussing on large-scale investment and integration within the public innovation ecosystem.

Example Projects

CentraLAB

The project CentraLAB aims to transform Central Europe into a broad-reaching laboratory for innovation. CentraLAB thus aims to clarify the competitive advantage of a new model of innovation that draws on Central Europe’s deep, common cultural heritage to strengthen territorial cohesion, promote internal integration. The Trentino’s Pilot is on Energy Efficiency.

i-SCOPE

Experimental pilots around “smart city” services for:

- 1) improved inclusion and personal mobility of aging and diversely able citizens through an accurate city-level differently-abled-friendly personal routing service which accounts for detailed urban layout, features and barriers.
- 2) optimisation of energy consumption through a service for accurate assessment of solar energy potential and energy loss at building level.
- 3) environmental monitoring through a real-time environmental noise mapping service-leveraging citizen’s involvement will who act as distributed sensors citywide measuring noise levels through their mobile phones.

SUNSHINE

Experimental pilots around smart services for: 1) energy assessment of buildings at urban scale for the creation of “ecomaps” and their energy pre-certification; 2) optimisation of energy consumption of heating/cooling systems based on localised weather forecasts and energy modelling of buildings; 3) optimisation of power consumption through remote control of public illumination levels.



Opendata In Trentino

Co-design with the public administration of the complete the process of opening of public information (PSI) to enable efficiency, growth and participation, enhancing the value of data as a cultural, legislative and organisational development in the territory, and at the same time aligned with the technological state of art scientific research in the field of Open and Big Data.

Context Aware

Involvement of different impaired users in the development of a geoinformatics platform to support the right to mobility. The project provides registered users to the service, information about the context that surrounds them, in relation to information related to the geographic location, time of day, and to the interests of the user with the data in different databases provincial. Usage is predominantly by mobile users via an application for mobile devices. The data collected is then released as open data.

Taslab is actively using a regional eco-systemic approach to innovation, based on the quadruple helix model involving each initiative stakeholders and users from all 4 areas (research, industry, public administration, and citizens) focusing the co-creation of innovation through a citizen-driven approach. For this reason Taslab is commonly evaluating utility, usefulness of innovative projects in an interactive approach, through direct meeting and specific workshops and through the usage of social media and web interaction.

ENoLL asso- ciation

In February 2010 ENoLL became a legal entity by establishing an International Non-Profit Association under Belgian Law. The ENoLL aisbl (in French) / ENoLL ivzw (in Dutch) is a horizontal organisation, whose mission has been to support the evolution and the wide uptake of the living lab paradigm throughout Europe and worldwide.

ENoLL is an association of legal entities founded by a strong core group of so-called Effective and Associated members. The Association comprises Effective, Associated and Adherent members, but only effective members enjoy all the rights provided by the law and bylaws.

- **Effective members** are organisations with corporate personality that represent a living lab duly selected according to the ENoLL selection process (“waves”), become part of the association and meet their obligations as defined in the ENoLL bylaws. The ENoLL Effective members make up the ENoLL General Assembly.
- **Associated members** are organisations that are involved in the activities of the association, but are not selected as living labs according to the ENoLL selection process. They become part of the association under approval of the ENoLL General Assembly and meet their obligations as defined in the ENoLL bylaws.
- **Adherent members** are organisations that represent a living lab duly selected according to the ENoLL selection process. Adherent members have no voting rights but participate in the objectives and activities of the association. Their acceptance and resignation is approved by the ENoLL General Assembly.

The complete list of the historically ENoLL labelled members can be found in the annexes of this booklet.

The ENoLL Council (Sep 2015)

- Dr. Tuija Hirvikoski, Director Laurea University of Applied Sciences (Laurea Living Labs) (PRESIDENT)
- Mr. Artur Serra, Deputy Director, i2cat Fundacion (VICE PRESIDENT)
- Prof. Dr, Pieter Ballon, Director Living Labs, iMinds (SECRETARY)
- Mr. Esa Ala-Uotila, Customer Relationship Director, TAMK, Suuntaamo (TREASURER)

And by alphabetical order:

- Mr. Joan Batlle Montserrat, Assistant Director at department of Creativity and Innovation - Barcelona Institute of Culture (Barcelona Lab)
- Mr. Juan A. Bertolín, Chief Innovation Officer (CIO) at espaitec, Science and Technology Park (eLiving Lab)
- Mr. Marco Combetto, Innovation manager at Informatica Trentina spa ("Trentino as Lab" living lab)
- Mr. Jarmo Eskelinen, CEO of Forum Virium Helsinki
- Mr. Paul Fairburn, Director of Enterprise & Innovation at Coventry University (City Lab Coventry)
- Mr. Jokin Garatea, Manager of the International Project Department, Gaia (BIRD Living Lab)
- Ms. Sakariina Heikkinen, R&D&I Specialist at HAAGA-HELIA University of Applied Sciences
- Dr. Marita Holst, Botnia General Manager, Luleå University of Technology (Botnia Living Lab)
- Prof. Joelle Mastelic, Professor & Researcher at the University of Applied Science Western Switzerland (Energy Living Lab)
- Mr. Adam Olszewski, Implementation manager at Poznan Supercomputing and Networking Center (Poznan Living Lab)
- Mr. Ismael Perea, Executive Director, Consorcio Fernando de los Rios
- Dr. Brigitte Trousse, President of France Living Labs

The complete list of active ENoLL members as per approval of the latest ENoLL General Assembly (held at the end of August 2015) can be found in the ENoLL Network chapter earlier in this publication.

The list of ENoLL Effective members (as per end of 2015) and its description can be found earlier in this publication in the chapter "deepening though the ENoLL leading members". Information about Associated members can also be found in the ENoLL members' section.

As a legal entity, ENoLL international association focuses on facilitating knowledge exchange, joint actions and project partnerships among the members, promoting living labs and enabling their implementation worldwide, and, influencing policies.

The ENoLL General Assembly (general steering body) comprises all Effective members and has all the powers allowing the realization of the objectives as well as the realization of the activities of the association and its decisions are binding to all members.

The ENoLL Executive Board or **ENoLL Council** (management body) provides strategic guidance to the network. It monitors and directs the activities of the Brussels ENoLL office and the activities of the ENoLL Work Groups, Expert Groups and Task forces. ENoLL Council with the lead of the Chair, prepares the draft annual ENoLL Work Programme and budget, and presents these to the ENoLL General Assembly for discussion and approval. The ENoLL Council is responsible for the implementation of the Work Programme, in line with the budget.



The ENoLL office team (2015)

*Ms. Lorna Stokes,
Communication Manager*

*Ms. Zsuzsanna Bodi,
Project and Business
Development Manager*

*Ms. Ana García Robles,
Director of ENoLL*

*Mr. Paolo Aversano,
Network manager
and Project Development*

The ENoLL network has been traditionally organised in Thematic Domains. Living labs have both a thematic and territorial approach and ENoLL members collaborate grouped into thematic domains. The identified ENoLL thematic domains are:

- Energy Efficiency. Sustainable Energy and Climate change
- Well Being and Health
- Smart Cities and Urban Innovation
- Social Innovation. Social Inclusion
- e-Government. e-Participation / Public services innovation
- Culture, cultural heritage and creative industries
- Education
- Regional, territorial and rural development of Smart Regions
- Sustainable Mobility
- Manufacturing and logistics
- Security

ENoLL members can participate in the ENoLL Expert Groups. The ENoLL Expert Groups aim at bringing together ENoLL members with a shared interest in advancing a specific area of knowledge or particular field and help to develop some of the thematic domains.

The active ENoLL expert groups are:

- Smart cities and urban innovation
- Regional living labs
- Health Living Labs
- Research and Future of Living Labs
- Living Lab services for SMEs

The **ENoLL Office** (ENoLL Secretariat) is the operational body of the association and the network. It is based in Brussels, Belgium, on the campus of the Vrije Universiteit Brussel (the Flemish Free University) and is hosted by one of the Living Labs in the ENoLL network, iMinds. The ENoLL office team, led by the ENoLL Director, is a multidisciplinary and international team of professionals with diverse background, and skills and nationality. The ENoLL team is continuously enforced by external experts and professionals mainly part of the ENoLL community and members, who support ENoLL activities both at operational and strategic level. ENoLL also counts with the support of iMinds that provides some internal general services and support to the ENoLL team.

The ENoLL office is in charge of the daily management and association administration, organises multiple events,

European Network of Living Labs



workshops and forums in many different domains of activity all over the year, develops and participates in projects and strategic initiatives, disseminates knowledge, results and best practices, manages all the business processes of the association (waves, calls, annual event, framework agreements, implementation of strategic collaborations, support to expert and working groups), and provides full support to the ENoLL Executive Board in both strategic and operational matters. ENoLL ivzw organises a yearly event called OpenLivingLab Days (former ENoLL Summer school), with a 7th edition hosted in Montreal (Canada) in August 2016. Previous editions have taken place in Paris, Barcelona, Helsinki, Manchester, Amsterdam and Istanbul. ENoLL also launches every year a call for research papers, and runs a full research day at its annual conference. Many educational workshops and discussing forums for emerging topics are organised as a part of the conference.

ENoLL has very well established dissemination channels (website, Twitter, Facebook, LinkedIn, Slideshare, Vimeo, etc.) with a worldwide outreach and produces a monthly newsletter.

ENoLL also participates in projects to help contribute to build ENoLL assets, support joint activities in-between ENoLL members, and to strengthen connections between ENoLL and local, regional and international user communities, governments, policy makers, research institutions, and other relevant organisations and communities. Directly, as well as through its active members, ENoLL provides co-creation, user engagement, test and experimentation facilities targeting innovation in many different domains such as energy, media, mobility, healthcare, agrifood etc. As such, ENoLL is well placed to act as a platform for best practice exchange, learning and support, and Living Lab international project development. ENoLL is currently involved in 7 different strategic initiatives (with an additional 11 historically completed projects). ENoLL's main expertise from a project perspective is in dissemination, event and workshop development, knowledge transfer and training, community building, community management, brokering and networking activities and experts, stakeholder engagement, and support to exploitation. ENoLL also works as a single entry point to outreach different cross-cultural communities at European scale.

By joining ENoLL, Living Labs are offered some benefits and services (depending on membership type):

- ENoLL label
- Network contact point
- Communication and promotion services
- Project development services
- Brokering services
- Policy and Governance
- Learning and Educational services

ENoLL has developed some strategic partnerships over the years, being the collaboration with the World Bank, France Living Labs and the EBN network the most relevant and fruitful ones so far.

Full information about ENoLL association, network, services, projects and collaborations can be found on the ENoLL website www.openlivinglabs.eu

future and vision

During 2014 ENoLL developed a new vision: “Empowering everyone to innovate”. In the context of our global and digital economy and society, and the technological (IoT, 5G, cloud, Open and Big data,..) and economical (sharing economies) paradigm shifts, this vision represents advocacy to user, citizen and community-driven innovation, embracing collaboration and open innovation, skills development, entrepreneurship, new business models and technology neutrality.

This vision guides ENoLL in the original mission of developing “a new innovation system”. In implementing this mission ENoLL is committed to lead and contribute in the development of an innovation system that empowers everyone to innovate, generating new jobs by building meaning and creating value. Born to be a European policy instrument, ENoLL works in the direction of becoming the reference network for creating pan-European experiments and prototypes for new markets, based on the Digital Single Market. An open engagement platform where new business models can be experimented and developed all based on quadruple helix approach, creating safety nets for experiments and prototypes with new roles of the public sector as an enabler and catalyser. ENoLL can combine European vertical specialisation domains (health, smart cities, creativity, education etc.) with horizontal and territorial specialisation. ENoLL aims at contributing to

the European Innovation ecosystem supporting the design of new public-private-people partnerships, the design of the instruments and projects enabling experimentation and prototyping in early stages, and the design of the evaluation criteria.

ENoLL's work towards the future is guided by questions such as: "How to create new industries based on open engagement platforms and Digital Single Market in Europe?" "Is it possible a citizen-driven city, region, society?" "How to utilise Open Innovation 2.0 methodology and ENoLL for promotion of new industries?" "How to develop and pilot new business models and value creation models?" "How can ENoLL and living labs support this?"

The first steps in this direction saw the light during 2015 with the publication of the guidebook "Citizen Driven Innovation: A guidebook for city mayors and public administrators" a result of the strategic collaboration in between the World Bank and ENoLL. As this guidebook says, this is just the beginning of our journey.

On the other hand, ENoLL believes "Labs" and the lab movement are the basis of the knowledge society and the new innovation system, and ENoLL is a driving force for this future of Innovation. ENoLL acts as a connector, facilitating

inter-labs connection, connecting living labs to the territory, connecting labs to those ones who need their services, and developing inter-lab protocols.

Finally, ENoLL acknowledges the current strong and increasing demand of Open Innovation 2.0, living lab knowledge and skills. ENoLL has been always committed to make the existing knowledge open and accessible in addition to supporting cities and regions. Good examples would be our contribution to the regional research and innovation strategies for smart specialisation (RIS3), OpenLivingLab Days (formally the ENoLL Summer School) which is organised annually and now heading towards its 7th edition, and the on-going promotion of cases and educational publications via www.openlivinglabs.eu. To support the growing demand, and the increasing support than cities and regions need, in particular now to smartly invest their structural funds in developing this innovation layer; ENoLL is in the process of launching the ENoLL Learning Lab.



historically recognised ENoLL members

Country	Living Lab name	Host organisation	Wave
Australia	Future Logistics Living Lab	NICTA	5
Australia	Adelaide Living Laboratories	CRC for Low Carbon Living	8
Austria	Mobile City Bregenz		1
Austria	LivingLab Schwechat	CEIT	2
Austria	EVOLARIS MOBILE LIVING LAB (Graz)	evolaris next level GmbH	3
Austria	Sound of Media LL	Spirit Media GmbH	4
Austria	CityLAB Graz	CityLAB Graz	9
Belgium	iMinds	iMinds	1
Belgium	Open Innovation Centre	iMinds	1
Belgium	Ghent Living Lab	City of Ghent	5
Belgium	LeYLab (Light & You Lab)	Alcatel-Lucent Bell	5
Belgium	Egg Lab	The Egg Exploitation	5
Belgium	Flemish Living Lab Platform	Telenet	5
Belgium	Living and Care Lab (LiCaLab)	City of Turnhout	6
Belgium	JF Oceans	JF Oceans	6
Belgium	Future Classroom Lab	European Schoolnet a.i.s.b.l	6
Belgium	Careville	City of Genk and Hasselt	8
Belgium	Innovage	SEL GOAL	8
Belgium	AIPA – Ageing in Place Aalst	City of Aalst	9
Belgium	ONLINE buurten / ONLINE neighbourhoods	Public Centre of Social Welfare of Bruges	9
Brazil	Habitat Living Lab		4
Brazil	Amazon Living Lab		4
Brazil	Amazonas Living Lab	Secretaria de Estado de Ciência Tecnologia	4
Brazil	Brazilian Biotech Innovation Living Lab		4
Brazil	EDP/Brasil LL		4
Brazil	ESPÍRITO SANTO CIDADANIA DIGITAL LIVING LAB	Federal University of Espirito Santo (UFES)	4
Brazil	Group Inter-Action LL	Federal University of Amazonas (UFAM)	4
Brazil	INdT- Well Being and Health Care LL / Mobile Work Spaces Living Lab	Nokia Institute of Technology (INdT)	4
Brazil	Well Being Rio Living Lab	Genesis Institute PUC-Rio	4
Brazil	Corais Open Innovation Platform	Faber-Ludens Institute for Interaction Design	6
Brazil	Cuidando do Future	Secretaria de Estado da Saúde	6
Brazil	Inventa Brazil Rural Living Lab	Brazilian Rural Innovators Researchers and Inventors Association (ABIPIR)	6
Bulgaria	Digital Spaces Living Lab	Digital Spaces LL Founding	3
Bulgaria	VirtSOI (Virtual Services and Open Innovation)	Virtual Technologies	3
Cameroon	ISATIC Living Lab	AFRICAN ADVANCED INSTITUTE FOR INFORMATION TECHNOLOGY AND KNOWLEDGE	6
Canada	Urban Hub	Society for Arts and Technology [SAT]	4
Canada	Manda Lab	Communautique	5
Canada	1125@Carleton(The Innovation Edge: A Living Laboratory)	Carleton University	7
Canada	Digital Transition Laboratory	CEFRIO	7
Canada	SU R&D Living Lab of Quebec	SU Research and Development	7
Canada	Rehabilitation Living Lab in the mall (RehabMaLL)	Centre for Interdisciplinary Research in Rehabilitation of Greater Montreal (CRIR)	8
Canada	Living lab en innovation ouverte (LLio)	Cégep de Rivière-du-Loup	9
China	Green Living Lab		3
China	CMCC Lab for User Behavior	China Mobile Research Institute	4
China	Living Lab of China Mobile Communication Corporation (LLCM)		4
China	MC² Mobile Life Club	Mobile Life & New Media Laboratory (MINE lab)	4
China	LivingLab Shanghai	Tongji University	9
Colombia	CINTEL	Telecommunications Research Center	4
Colombia	Antioquia Department of Knowledge Living Lab		5
Colombia	GestionRiesgoTIC Risk Management ICT	Red Salvavidas	5
Colombia	Laboratorio Vivo Inteligencia Colectiva	Knowledge Factory	5
Colombia	Living Lab Ciudad Bolivar Digital	Universidad Distrital Francisco Jose de Caldas	5
Colombia	Medellín Digital Living Lab	Fundación EPM	5
Colombia	Living Lab Cluster TIC's Bogota	Esicenter Sinertic Andino	5
Colombia	Pereira City of Knowledge Living Lab	Country of Knowledge Foundation	6
Colombia	ExPiN MediaLab	Universidad Autónoma de Occidente - UAO	7
Croatia	Rijeka iLivingLab	Faculty of Maritime Studies	4
Cyprus	Territorial Living Lab Kypros	Anetel – Larnaca District Development Agency	4
Cyprus	FUNecole Creative Learning Environment	Digipro Computer Consultants Ltd	7
Czech Republic	Wirelessinfo Czech Living Labs	Wirelessinfo	1
Denmark	Copenhagen Living Lab	Copenhagen Living Lab	2

Country	Living Lab name	Host organisation	Wave
Denmark	Digital Urban Living Lab (DULL)	Regional Government of Midt Jylland	5
Denmark	DOLL - Danish Outdoor Lighting Lab	Gate 21	9
Egypt	Egyptian School Education Living Labs	Technology Development Center (TDC) Egyptian Ministry of Education	5
Egypt	Egyptian-Dutch Agricultural LL	Agriculture Research Center (ARC)	5
Egypt	RetailNetLL	Internal Trade Modernization Center – ITMC	5
Estonia	Smart City Lab	Smart City Lab	9
Finland	Helsinki Living Lab - Forum Virium Helsinki	Forum Virium Helsinki	1
Finland	Turku Archipelago Living Lab	Archipelago Ltd.	1
Finland	Laurea Living Labs Network	Laurea University of Applied Sciences	2
Finland	Agro Living Lab	Frami	2
Finland	Lahti Living Lab	Lappeenranta University of Technology	2
Finland	Kainuu Living Lab (Snowpolis)	Snowpolis Ltd	2
Finland	Northern Rural-Urban Living Lab (NorthRULL)	Center of Internet Excellence	2
Finland	HumanTech LivingLab	JAMK	3
Finland	TAMK Living Lab	Hermia	3
Finland	Living Lab for Design and Services, Karelia University of Applied Sciences	D'ART Design Resource Centre, Karelia University of Applied Sciences	3
Finland	Digital Living Lab	Digital Living	3
Finland	Nokiaareena Living Lab - NALLI	Tampereen teknillinen yliopisto	3
Finland	Owela (Open Web Lab)	VTT Technical Research Centre of Finland	3
Finland	Suupohja Living Lab	Federation of Municipalities for Economic Development in Suupohja region	3
Finland	OULLabs Oulu Urban Living Labs	University of Oulu	4
Finland	Living Lab for Well-being and ICT (TWICT)	Turku University of Applied Sciences	4
France	LL ICT Usage Lab	INRIA	1
France	LEVIER (Laboratoire d'Expérimentation et Valorisation Images Et Réseaux)	Images et Réseaux	2
France	Normandy Living Lab	Secure Electronic Transactions (TES)	2
France	Silicon Sentier Living Lab	Silicon Sentier (La Cantine)	2
France	Autonom'Lab	Pôle régional d'innovation en Santé et Autonomie des personnes	3
France	Issy-les-Moulineaux Medialand	Issy Media	3
France	3D Living Innovation	La Fabrique du Futur	3
France	TPMed Lab	TPM Digital Country Department	3
France	Greater Paris Region Living Lab	Cap Digital	3
France	Territories of Tomorrow Living Lab	Territories of Tomorrow Foundation	3
France	Integrative Usage Lab (IUL)	Cité des Sciences et de l'Industrie - Laboratoire CHArt-LUTIN	3
France	Design Creative City Living Lab (DCC-LL)	Cité du Design	4
France	Erasmé Living Lab	Département du Rhône	4
France	Lorraine Smart Cities Living Lab	ERPI - Université de Lorraine	4
France	CESARS	Centre national d'études spatiales (CNES)	4
France	eCare Lab	MEDICALPS	4
France	Paris Region Lab	Paris Innovation Belleville	4
France	Imaginove's Living Lab	Cluster Imaginove Pôle audiovisuel PIXEL	4
France	Innovasud Rall		4
France	La Defence Living Lab (Def-i)	Secrétariat d'Etat à l'Economie Numérique	4
France	Live with Risk Living Lab	City of Tarascon	4
France	New Media Living Lab	Empreinte Multimedia SA	4
France	Digital Ardennes	BGF Animation Communication	4
France	Do Tank Post Carbon Living Lab	Quattrolibri	4
France	PATS - E2L		4
France	Le Restaurant Living Lab	Centre de Recherche de l'Institut Paul Bocuse	5
France	Universcience Living Lab	Cité des sciences et de l'industrie	5
France	University of Reunion Island Living Lab for Teaching and Learning	University of Reunion Island	5
France	CIMLAB Caraïbe Innovation Martinique Living Lab	Communauté de Commune du Nord de la Martinique	5
France	Augmented Learning I Design for people	CNED (Centre National d'Enseignement à Distance)	5
France	Laval Virtual Reality Living Lab	Laval Mayenne Technopole	5
France	Ways Of Learning for the Future (WOLF LL)	La Cité des Savoires	5
France	CAREEP Living Lab	CAREEP (Carrefour des Entreprises de l'Est parisien)	5
France	i-Matériel.Lab	Association i-Matériel.Lab	5
France	Off Road Memory Lab	University of Nantes	5
France	QuakeUp	Prevention2000	5
France	Tele Health Aging Territory (THAT)	L'Institut Edouard BELIN	5
France	Urban Living Lab (Versailles Saint-Quentin-en-Yvelines)	Fondaterra Foundation	5
France	LUSAGE Gerontechnology Living Lab	Hôpital Broca - Assistance Publique - Hôpitaux de Paris	6

Country	Living Lab name	Host organisation	Wave
France	Brie'Nov	Brie'Nov	6
France	Smart City Living Lab	Dedale Association	6
France	Pôle Numérique	Pôle Numérique	6
France	3E-Paris Periurban Lab	PROPEDIA – Research Center of Groupe IGS Association	6
France	Education Therapeutique Living Lab (ETP-LL)	GUADEDUKAS	6
France	Living Lab Muse	Livinglabmuse : A TOOL FOR HERITAGE COMPUTERIZATION	6
France	Ouest Médialab – Invent tomorrow digital medias	Association Ouest Médialab	6
France	Sport Innovation Living Lab	SPORALTEC	6
France	Sustainable Art and Culture Lab - Fontainebleau	ARENE Ile de France – Regional Environmental Agency	6
France	VisAge Living Lab	Camera Contact	6
France	Nova CHILD's Living Lab	Nova CHILD	7
France	Living Lab ActivAgeing	Université de Technologie de Troyes	7
France	PAsteur Innovative Living Lab Of Nice 2020	City of Nice	7
France	Job Map	Maison de l'Emploi et de la Formation de Sénart	7
France	Living Labs Pays d'Aix	Association bype Labs	7
France	Strasbourg University hospital's Innovation lab La Fabrique de l'hospitalité	Strasbourg University hospital's (CHU)	7
France	Réunica Domicile	Réunica	8
France	Silver Normandie Hub	Regional Agency for Innovation	8
France	Streetlab	Streetlab	8
France	Digital Home Living Lab (DHLL)	Association Pour Habiter Interactif (PHI)	9
France	Hygée Lab	Centre Hygée	9
Germany	Knowledge Workers Living Lab	CETIM	1
Germany	Mobile City Bremen	WFB Wirtschaftsförderung Bremen GmbH	1
Germany	The Virtual Dimension Center (VDC)	Virtual Dimension Center	2
Germany	ViRaL Cooperation Lab	Fraunhofer FIT	2
Germany	Ambient Assisted Living Environment / Alliance	Fraunhofer IESE (Institut Experimentelles Software Engineering)	3
Germany	EXPERIMENTAL FACTORY MAGDEBURG	EXPERIMENTAL FACTORY MAGDEBURG	3
Germany	iRegion Karlsruhe	Karlsruhe	3
Germany	Nuremberg Mobile Application Centre (NuMac)	Nuremberg Mobile Application Centre for Elderly and Disabled	3
Germany	WILL- Workability and Knowledge Lab	TZI, University of Bremen, Germany	3
Germany	Future Care Lab	RWTH Aachen University	4
Germany	PRAXLABS: Creating innovative technologies in practice	University of SiegenInformation Systems and New Media	4
Germany	FZI Living Lab Ambient Assisted Living	FZI Forschungszentrum Informatik	4
Germany	DAILL - Distributed Artificial Intelligence Living Lab	Technische Universität Berlin DAI-Labor	4
Germany	Hamburg Living Lab	Tu Tech Innovation	5
Germany	Bremen Ambient Assisted Living Lab	DFKI GmbH	5
Greece	Thessaloniki Living Lab - Thessaloniki Lever for Open Innovation		2
Greece	Living Lab Thessaly (LLT)	Centre for Research and Technology	3
Greece	Lifenet	National Center for Research and Technological Development	3
Greece	Telecommunication Networks and Integrated Services Laboratory (TNS LL)	University of Piraeus Research Center	5
Greece	Cretan and South Aegean Living Lab	University of Crete	5
Hungary	Győr Automotive Living Lab	Hungarian Vehicle Engineering Cluster	1
Hungary	Godollo Rural LL		1
Hungary	Creative Knowledge Centre (CKC) Living Lab	Creative Living Lab Ltd	2
Hungary	Homokhát Rural Living Lab	University of Szeged	4
Hungary	Innovative Learning Solutions (Flexilab)	Corvinno Technology Transfer Center Nonprofit Public Company Ltd.	5
Hungary	Well-being Living Lab Nagykovacs	TREBAG Property- and Projectmanagement Ltd	5
Hungary	Green Living Lab	KTI Nonprofit Kft	5
Iceland	Iceland Living Lab	Innovation Center Iceland	4
India	Smart Village Living Lab (SVLL)	School of Applied Science, KIIT University	9
Ireland	Arc Labs Waterford	Waterford Institute of Technology	1
Ireland	Centre for Sustainable Technologies (CST)		3
Ireland	CASALA Living Lab	Dundalk Institute of Technology	5
Ireland	Dublin LivingLab	The Green way	8
Italy	Frascati Living Lab	ESA-ESRIN	1
Italy	Trentino as a Lab	Informatica Trentina Spa	2
Italy	TLL - Territorial Living Lab for the Sicilian Region	ARCA, Consortium for the application of research and the creation of innovative enterprises	2
Italy	ITL – Living Lab for Logistics	ITL Foundation	2
Italy	Living Piemonte	CSP	3
Italy	Lunigiana Amica	Lunigiana Amica	3

Country	Living Lab name	Host organisation	Wave
Italy	C.LAB - Piedmont Community Labs	CSI-Piemonte Laboratory	3
Italy	Leaning Lab Pisa	Facoltà di Ingegneria dell'Università di Pisa	3
Italy	Space2Land Living Lab	Filas	3
Italy	Telemedicine Living Lab	Telesal s.c.a.r.	3
Italy	Research Innovation Centre	Consorzio Roma Ricerche	4
Italy	Living Lab of the Prato Textile District	TEXMEDIN	4
Italy	Energy Lab	Te.COM Multimedia	4
Italy	eToscana	Regional Government of Tuscany	4
Italy	Interaction Design and Communication Technologies Lab (IDE-aCT)	Sapienza Innovazione	4
Italy	Torre Guaceto Living Lab	Torre Guaceto Park Agency, Milano Polytechnic	4
Italy	WB@W	ambiente	4
Italy	X-LAB	X-Lab	4
Italy	eGSI - eGovernment Services Intermediation		4
Italy	ICT Laboratory for the Public Administration (LabICT-PA)	Lepida SpA	5
Italy	Scuola Superiore Sant'Anna Living Lab	Scuola Superiore Sant'Anna	5
Italy	Territorial Living Lab (TL PREALPE)	Consorzio di Servizi Pedemontano	5
Italy	SaMPL Cultural and Creative Living Lab	Conservatorio Statale di Musica "Cesare Pollini"	5
Italy	City of the Future Living Lab	Fondazione Centro San Raffaele del Monte Tabor	6
Italy	ValléeLab	Alcortra Innovation Living Lab in Aosta Valley	6
Italy	Trento H&WB-TL	Trento Rise	6
Italy	Cross-Border Living Lab on Territorial Marketing (CBLTLM)		6
Italy	Puglia Smart Lab	Dhitech	7
Italy	CRICKET LIVING LAB	Openwork s.r.l.	8
Italy	KLIO Lab	DHITECH s.c.a.r.l.	8
Italy	Green Schools	Province of Treviso	8
Italy	St.E.SE.Geo (Geo-localized Structures and Services Lab)	Computer Sharing Sud s.r.l.	8
Italy	TIE-LL Technology Innovation Ecosystem	DHITECH	8
Italy	TAGS (Technology Infrastructure allowing to experiment gamification strategies for social services innovation)	I & T Sistemi Srl, Bari	8
Italy	Lecco Innovation Living Lab	Univerlecco	9
Italy	Apulian Living Lab on "Healthy, Active & Assisted Living" (IN-NOVAALab)	INNOVAAL, (Public-Private Partnership on Research & Innovation in Active & Assisted Living)	9
Italy	Formedil Lab	Formedil Hub	9
Italy	Apulian ICT Living Lab	InnovaPuglia SpA	9
Japan	Tokyo Living Lab	Reality Media Project, Graduate School of Media Design, Keio University	7
Latvia	TDF LatLab (Technology Development Forum)		6
Lebanon	Berytech Living Lab (BeLL)	Berytech Technology Pole	6
Luxembourg	Technoport Living Lab Luxembourg	Technoport SA	7
Malta	Living Lab Malta	Maltese Institute of Open Innovation hosted by Smart City Malta	3
Malta	Euro-Mediterranean Initiative for Technology and Innovation	Malta Council for Science and Technology,	3
Mauritius	Innovative Learning & Teacher Education Living Lab (IL.TE.LL)	Centre for Innovative and Lifelong Learning, University of Mauritius	9
Mexico	Knowledge Markets for Knowledge Cities	Center for Knowledge Systems, Tecnológico de Monterrey	6
Mexico	noulab (Territorial Intelligence and citizen empowerment)	Universidad de Guadalajara/Centro Universitario de Ciencias Sociales y Humanidades.	6
Mexico	KMSME Living Lab (Knowledge Micro, Small & Medium Enterprise Living Lab)	QoS Labs de México S.A. de C.V.	6
Mexico	Knowledge Women Innovation Space (KWINS)	Pronea Lab	6
Mozambique	Maputo Lab	Mozambique information and communication Institute	4
Netherlands	Freeband experience lab	IIP Intelligent Communication	1
Netherlands	Amsterdam Living Lab	Amsterdam City Council	3
Netherlands	Next Generation Labs East Netherlands NGL-EN	City of Deventer	4
Netherlands	MiPlaza Living Lab	Philips research	4
Netherlands	HIM Foundation The Hague Innovation Motor	The VIDE Workshop	6
Netherlands	Care Innovation Center West-Brabant	Stichting Care Innovation Center West-Brabant	8
Netherlands	Eindhoven Living Lab	City of Eindhoven	8
Norway	Wireless Trondheim Living Lab	Wireless Trondheim NTNU	3
Norway	The RECORD online Living Lab	SINTEF and Opinion AS	3
Norway	Borg Innovation Living Lab	Borg Innovation	4
Norway	Far North Living Lab	Norut - Northern Research institute Tromsø, the ICT department - responsible for administration and technology	4
Paraguay	Paraguay Educa Lab	Paraguay Educa	6
Peru	Innovation Network and Knowledge Accessibility Living Lab (INKALab)	CLEAC SAC	6

Country	Living Lab name	Host organisation	Wave
Poland	International Centre for Decision Sciences & Forecasting (CDSF)	Progress & Business Foundation	4
Poland	Turecki Living Lab (TUR-LL)		4
Poland	Kielce Technology Park Living Lab	Kielce Municipality/Kielce Technology Park	6
Poland	Poznan Living Lab	IBCh PAS - Poznan Supercomputing and Networking Center	7
Poland	KRAKOW LIVING LAB	Krakow Technology Park	9
Portugal	Madeira Living Lab	Madeira Tecnopolo	1
Portugal	RENER Living Lab	INTELI – Inteligência em Inovação	2
Portugal	Creative Media Lab	INTELI - Inteligência em Inovação - Centro de Inovação	2
Portugal	ECO LivingLab@Chamusca	Chamusca's Eco Industrial Park	2
Portugal	Living Labs Minho	Universidade do Minho, Escola de Engenharia	2
Portugal	SJM-ILL - S. João da Madeira Industrial living lab	SANJOTEC - Scientific and Technological Association	2
Portugal	Lighting Living Lab		3
Portugal	FIAPAL Living Lab	Fórum da Indústria Automóvel de Palmela	3
Portugal	Smart Rural Living Lab	Penela Municipality Praça do Município	4
Portugal	Sustainable Construction Living Lab	CONSTRUÇÃO SUSTENTÁVEL	4
Portugal	Agueda Living Lab	Agueda Municipality	4
Portugal	ISaLL - Intelligent Sensing and Smart Services Living Lab		4
Portugal	Sport Living Lab Lisboa - VIDEALL	Faculdade de Motricidade Humana	4
Portugal	Ubiquitous/Invisible Computing Living Lab		5
Portugal	Living Lab da Cova da Beira	Câmara Municipal do Fundão	7
Portugal	Lisboa Urban Living Lab	Câmara Municipal de Lisboa	7
Portugal	Network of creative living labs (Crealab)	INTELI – Intelligence in Innovation, Innovation Centre	9
Portugal	SMoLL - Smart Mountains Living Lab	Municipality of Seia	9
Romania	A.R.C.H.E.S	University Politehnica of Bucharest	4
Saudi Arabia	Middle East Digital Ecosystem Living Lab (MEDELL)	SISCOM (SAWABEH INFORMATION SERVICES COMPANY)	6
Saudi Arabia	Jeddah Riyadh Smart Living Lab	RTV and King Abdul Aziz University	8
Senegal	African Living Lab ISEG/UNIDAF	Cesmi Faculté de Droit Université de Dakar	4
Serbia	Precision Agriculture Living Lab	Biosense Center, University of Novi Sad	7
Slovenia	Slovenia eLivingLab	Faculty of Organizational Sciences, University of Maribor,	1
Slovenia	ICT Technology Network	ICT Technology Network	2
Slovenia	Slovenian Automotive Living Lab	ACS - Automotive Cluster of Slovenia	2
Slovenia	LENS Living Lab	Inova Consulting	4
Slovenia	E-zavod Living Lab	E-zavod, Institute for Comprehensive Development Solutions	5
Slovenia	Laboratorij Odprtega Inoviranja ORbiTaLA	Mariborska razvojna agencija (eng: Maribor Development Agency)	7
South Africa	Sekhukhune Rural Living Lab	Meraka Institute	4
South Africa	Siyakhula Living Lab	Rhodes University	4
Spain	i2Cat Catalonia Digital Lab	i2CAT foundation	1
Spain	eHealth Living Lab	Telefónica I+D	2
Spain	Living Lab Berlanga de Duero - Soria	ADEMA, a Local Action Group	2
Spain	Zaragoza Living Lab	Zaragoza City of Knowledge Foundation	2
Spain	Cudillero Living Lab	Cudillero Council	2
Spain	Citilab Cornellà	Fundació Privada pel Foment de la Societat del Coneixement	3
Spain	TCM Lab	Fundació Tecnocampus Mataró-Maresme	3
Spain	22@LIVING LAB	22 ARROBA BCN, S.A.U	3
Spain	Barcelona Digital Cluster	Agrupación Empresarial Innovadora (AEI)	3
Spain	CIAMI - Exp Research Center in Applications and Services for Ambient Intelligence	ITACA Research Institute and Soluciones TSB, S.A.	3
Spain	guifi.net	Fundació per a la Xarxa Oberta, Lliure i Neutral	3
Spain	InnovaLab	Asociacion InnovaLab	3
Spain	Living Lab Salud Andalucia	IAVANTE (Foundation for Technological Advancement & Professional Training);	3
Spain	Madrid4Inclusion	Prodis foundation	3
Spain	Rio Nacimiento Living Lab	Fundación Rural Lab	3
Spain	SENIORLAB – Living Lab for Robotics in an Ageing Society	Cetix Foundation	3
Spain	Segovia Tech Living Lab	Círculo de las Artes y la Tecnología	3
Spain	VilanoLab	Neàpolis	3
Spain	SMART-HOUSES LIVING LAB MADRID	LIFE SUPPORTING TECHNOLOGIES GROUP, POLITECHNIC UNIVERSITY OF MADRID	3
Spain	Subbética Cordobesa Living Lab	Grupo de Desarrollo Rural de la Subbética Cordobesa	4
Spain	eHealthMadrid Living Lab	Fundación para la Investigación Biomédica del Hospital Gregorio Marañón	4
Spain	Integral	Integral Rural Development Society	4
Spain	Living Lab La Serena	Centro de Desarrollo Rural "La Serena"	4
Spain	Living Lab Pais Romanico (RLL)	Pais Romanico Association	4
Spain	Los Pedroches Living Lab	Asociación ADROCHES, GDR Los Pedroches	4

Country	Living Lab name	Host organisation	Wave
Spain	Adismonta	Adismonta	4
Spain	AGDR Sierra de las Nieves	Asociación Grupo de Desarrollo Rural Sierra de las Nieves y su entorno	4
Spain	GDR Valle del Guadalhorce	GDR Valle del Guadalhorce	4
Spain	LivingCAR Living Lab	EDE SOCIAL Parque Científico Tecnológico de Gijón	4
Spain	Mendinet	Rural Development Associations of the Basque Country and the Public Limited Company ITSASMENDIKOI	4
Spain	Queso Andalucía Living Lab	GDR Valle del Guadalhorce	4
Spain	RuraisLAB GALICIA		4
Spain	Tragsa R&D Labs	Tragsa Group	4
Spain	Bird Living Lab	SOCIEDAD DE CIENCIAS ARANZADI Gaia	5
Spain	espaitec Living Lab (eLiving Lab)	espaitec, Science Technology and Business Park of Jaume I University	5
Spain	Mobility for sustainable territories – Mobility Lab	Gaia	5
Spain	Audiovisual Living Lab Terrassa (ALT)	Parc Audiovisual de Catalunya	5
Spain	SPORTIS Living Lab	Gaia	5
Spain	Bilbao Ekintza, EPEL (Comercios Innovadores de Bilbao)	Lan Ekintza Bilbao	5
Spain	MIMMALAB - Interactive Music Museum Living Lab	InterExpo	5
Spain	Man & Earth Living Lab	Fundación Félix Rodríguez de la Fuente	5
Spain	Plataforma Cero	LABoral Centro de Arte y Diseño Industrial	5
Spain	Málaga Living Lab	Municipal Energy Agency	5
Spain	Platja de Palma Living Lab (PdP LL)	Consorcio Playa de Palma	5
Spain	Legazpi BAI! Espacio territorial colaborativo	Ayuntamiento de Legazpi	5
Spain	Living Lab Campiña de Jerez	Asociación para el desarrollo rural de la Campiña de Jerez	5
Spain	RURAL LIVING LAB PIRINEUS	Centre Tecnològic Forestal de Catalunya	5
Spain	Guadalinfo Living Lab Network	Consorcio Fernando de los Rios Foundation	6
Spain	Ergo Lab	Gaia	6
Spain	IoT Smart Santander Living Lab	Universidad de Cantabria	6
Spain	H-Enea: Home Experiences node empowered for action	ACEDE, Home Basque Cluster Association	6
Spain	EMOSENZIA Living Lab	Instituto Interuniversitario de Investigación en Bioingeniería y Tecnología, Centrada en el Humano (UPV) LabHuman	6
Spain	Hermes Living Lab	Centro de Imagen y Tecnología del Conocimiento Biomedico, S.L	6
Spain	Life Living Lab using Technology (L3TECH)	Deusto Institute of Technology (Deustotech), University of Deusto	6
Spain	Museum IDC Living Lab	Universidad Complutense Madrid	6
Spain	Zorrotzaurre Art Working Progress	Hacería Artes Escénicas de Bilbao	6
Spain	Valdespartera Living Lab	Universidad de Zaragoza	6
Spain	Barcelona Laboratori	Institut de Cultura de Barcelona (ICUB)	7
Spain	S.S.I. Living Lab	Servicios Sociales Integrados, S. Coop.	7
Spain	NClic, Social Innovation Centre	Fundación Nuevas Claves Educativas (FNCE)	7
Spain	Living Lab Comercios Innovadores de Gran Canaria	Consejería de Empleo, Industria, Comercio y Artesanía del Cabildo de Gran Canaria	7
Spain	EVOMOBILE	University of Valencia	8
Spain	Iberian Institute in Psycho-Sciences Lab - Research and Innovation Centre	Fundación INTRAS	8
Spain	UAB Smart and Sustainable Campus Living Lab	Universitat Autònoma de Barcelona	8
Spain	Health Care Innovation Lab Orbital 40	Leitat Technological Center	8
Spain	Library Living Lab Barcelona	Computer Vision Centre / Universitat Autònoma de Barcelona	9
Spain	Living Lab Social in real environment	Fundación Ageing Social Lab	9
Spain	Food&HealthLab	University of Valencia	9
Sweden	Botnia Living Lab	Luleå University of Technology	1
Sweden	Halmstad Living Lab	Halmstad University	3
Sweden	The Swedish Living Lab on Vehicle and Transport ICT	Viktoria Institute	3
Sweden	Innovation Cultures	Umeå universitet	3
Sweden	Living Labs Öresund	Cluster 55, Öresund IT	3
Sweden	Airport Living Lab	CSC Sverige AB	3
Sweden	Malmö New Media Living Lab	Malmö Högskola	3
Sweden	New Homes for Health	Hälsans nya verktyg	4
Sweden	Stockholm Living Lab	Stockholm Living Lab/SICS	4
Sweden	Karolinska Living Lab	Karolinska University Hospital	4
Sweden	Users Award Living Lab		4
Sweden	SOFTEC (Swedish Open Facility for Technology in Elderly Care)	Center for Applied Autonomous Sensor Systems (AASS), Örebro University,	4
Switzerland	Cyber Care Clinique Living Lab	Cyber Care Clinique	2
Switzerland	Swiss Living Lab Community (SLLC) (Ecologies for Learning in distributed Project Teams)	Lucerne University of Applied Sciences and Arts	3
Switzerland	Swiss Open Laboratory for E-Tourism (SOLET)	Universität Bern	3

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Switzerland	Food Living Lab	Swiss Food Research	4
Switzerland	iHomeLab Living Lab	Lucerne University of Applied Sciences (LUAS)	5
Switzerland	Mobile Communications and Computing for Quality of Life	University of Geneva, Institute of Services Science	7
Switzerland	Energy Living Lab	Entrepreneurship & Management Institute - University of Applied Sciences and Arts Western Switzerland	8
Taiwan	Living Labs Taiwan	Innovative DigiTech-Enabled Applications & Services Institute (IDEAS)	4
Taiwan	TOUCH Center, Taiwan	Center for Technologies of Ubiquitous Computing and Humanity	4
Taiwan	Smart Life Lab, inc.		4
Taiwan	Taipei CVS Living Lab	Center of Innovation and Synergy for Intelligent Home and Living Technology(IN-SIGHT CENTER)	4
Trinidad and Tobago	User Experience Living Lab	The University of the West Indies	7
Tunisia	Start-Up Systeme Tunisia	Association SUST	5
Tunisia	Digi-Art Living Lab Tunis-Nabeul	NetInfo School of Art and Technology	9
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UK	Edinburgh Living Lab	University of Edinburgh	2
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European Network of Living Labs

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