Interreg Sudoe
EUROPEAN UNION
TR@NSnet
European Regional Development Fund

circe
RESEARCH CENTRE FOR ENERGY RESOURCES AND CONSUMPTION

Roadmap for Tr@nsnet University Living Lab methodology application

BASED ON inputs from actual Living Labs

Partner Responsible
CIRCE – Technology Center for Resources and Energy Consumption

Author:
Eduardo Sugrañes (CIRCE)

Project funded by the Interreg Sudoe Programme through the European Regional Development Fund (ERDF)

UNIVERSITÉ TOULOUSE III PAUL SABATIER
POLITÉCNICA INTERNATIONAL CAMPUS OF EXCELLENCE
Ciências ULisboa
cise Electromechatronic Systems Research Centre
La Rochelle Université
Funseam Fundación para la Sostenibilidad Energética y Ambiental
circe RESEARCH CENTRE FOR ENERGY RESOURCES AND CONSUMPTION
CTA

D3.3.1 – Roadmap for TR@NSNET LLU methodology application based on inputs from actual living labs

Partner Responsible

CIRCE – Technology Center for Resources and Energy Consumption.

Authors:

Eduardo Sugrañes (CIRCE – Technology Center for Resources and Energy Consumption).

Technical references

Project Acronym	TR@NSNET
Project Title	Living Lab model for an ecological transition through the integration and interconnection of complex heterogeneous grids.
Project Coordinator	George Zissis and Marie-Pierre Gleizes (Coordinators) | Lou Ackermann (Project Manager) lou.ackermann@univ-tlse3.fr
Project Duration	01.10.2020 – 31.03.2023 (30 months)

Deliverable No.	D3.3.1 Roadmap for TR@NSNET LLU methodology application based on inputs from actual living labs
Dissemination level (Pu/Co)	Public
Type	Report
Work Package	TG3 – Design of University Living Lab model
Lead beneficiary	#7 - CIRCE
Contributing beneficiary/ies	CTA and FUNSEAM
Due date of deliverable	30.10.2022
Actual submission date	XX.YY.2022

Version Record

Version	Date	Description of changes
V1	22.09.2022	Document creation
V2	xx.yy.2022	Inputs and peer-to-peer revision

Peer-Review and Approvals

Author/s	Reviewers
Eduardo Sugrañes (CIRCE)	Lou Ackermann (UT3)

Interreg Sudoe

EUROPEAN UNION

TR@NSnet

European Regional Development Fund

Disclaimer of Warranties

This project has received funding from the European Union's INTERREG SUDOE programme under Grant Agreement No SOE4/P1/F0986 through the European Regional Development Fund (ERDF)."
This document has been prepared by TR@NSNET project partners as an account of work carried out within the framework of the SUDOE programme.

Neither Project Coordinator, nor any signatory party of TR@NSNET Project Consortium Agreement, nor any person acting on behalf of any of them:

- makes any warranty or representation whatsoever, express or implied,
  - with respect to the use of any information, apparatus, method, process, or similar item disclosed in this document, including merchantability and fitness for a particular purpose, or
  - that such use does not infringe on or interfere with privately owned rights, including any party's intellectual property, or
  - that this document is suitable to any particular user's circumstance; or
- assumes responsibility for any damages or other liability whatsoever (including any consequential damages, even if Project Coordinator or any representative of a signatory party of the TR@NSNET Project Consortium Agreement, has been advised of the possibility of such damages) resulting from your selection or use of this document or any information, apparatus, method, process, or similar item disclosed in this document.

Table of contents

1. Introduction

Tr@nsnet project aims to contribute to the Energy Transition (ET) challenge by defining a new Living Lab (LL) model in the context of Open Innovation (OI). The objective is to create a **generic and transferable model** of LLs so that it can also be used by universities.

The Transnet project is divided into 3 task groups (TG), with TG3 being in charge of designing the new living lab model to address the challenges of the energy transition. This particular report is part of the deliverables foreseen in TG3 that will feed into the design of the new living lab model resulting from the project.

The objective of this document is to present the main conclusions of the study carried out during the workshop "From Idea to Sustainable Business" where more than 15 living labs representatives participated, and use this knowledge and experiences to outline a roadmap for living labs to successfully implement the Living Lab generic Model developed under Tr@nsnet project.

The insights and conclusions showed are the result of a +30 questions survey where participants replied providing highly valuable information about their respective living labs.

Data is presented aggregated and anonymized to maintain the confidentiality nature of the information processed, which was used only for the purpose of the elaboration of this report and not shared with third parties.

2. *"From Idea to Sustainable Business" workshop*

The workshop was hosted and organized by CIRCE technology centre in collaboration with CTA and FUNSEAM under the activity *A3.3 Application of the methodologies to private Living-Labs: Centers Excellence Network* leaded by CIRCE. For the workshop, researchers, representatives of industry and policymakers, user associations and other stakeholders were invited to encourage the use and get the most out of living lab spaces for activities such as exhibitions, training courses, industrial reports, innovation projects, etc.

Several activities were carried-out during the full-day workshop that made it possible to compile the information available to evaluate the application of the HC-Enoll and RS methodologies in other Living Labs in the public and private sectors. To this end, activities triggered a dialogue to discuss with LL managers how to implement the elaborated approach, learn more about the services and opportunities available to LLs to capitalize on within the LLU network and compile information on the main results of the application of the methodologies.

3. Workshop outcomes and Insights

Number of workshop participants

15 people participated form 3 different countries from SUDOE region (Spain, France and Portugal).

Roles of living lab respondents surveyed

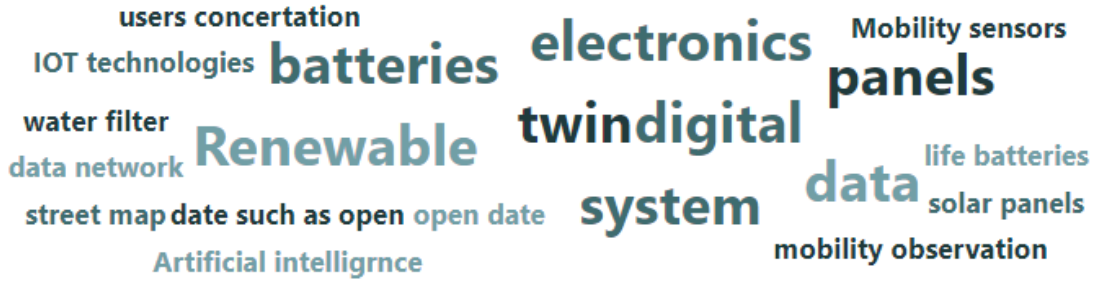
Living lab owner entity type

Global Challenges targeted by the respondents

In the following word cloud, we can notice that the main common denominator is the Energy Transition as the main driver under whose umbrella most of the challenges lie.

Main action lines of living labs respondents.

Main technologies used by living labs respondents.

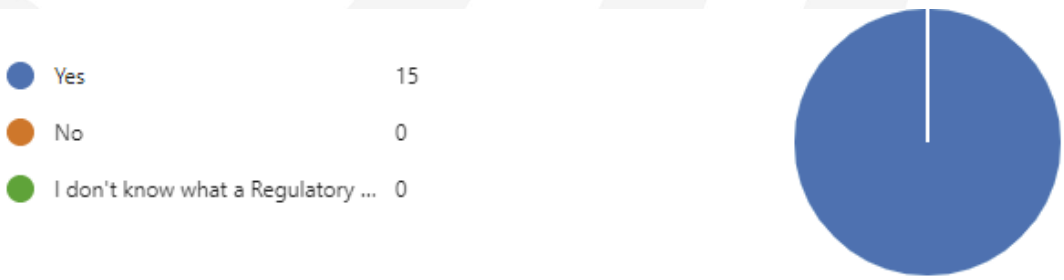


Recent challenge solutions requested by respondents' clients.

Industries benefiting from respondents Value Propositions.

Desire for having a Regulatory Sandbox in respondent's sector.

We can observe a unanimous consensus on the desirability of having regulatory sandboxes to accelerate the market access of solutions technically feasible, economically viable and user desired, but facing strong regulatory entry barriers and restrictions.

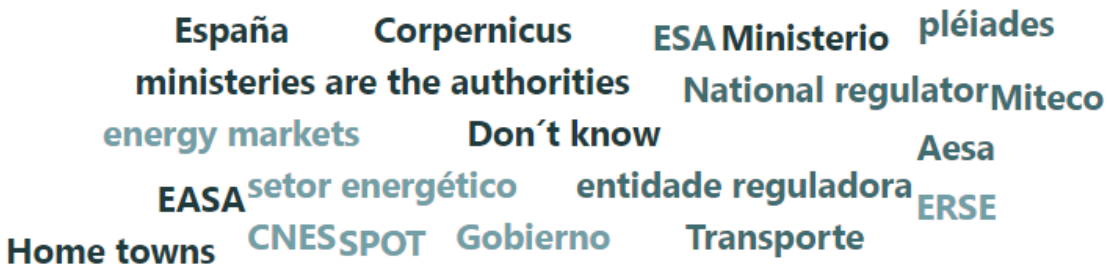


Industries targeted by respondents having a regulatory sandbox.

Here we can observe a clear uncertainty from stakeholders and lack in promotion when communicating regulatory sandbox plans or authorities' position on this regard.

Main authorities rulling the different regulatory sandboxes in respondent countries.

Despite of the uncertainty on whether there is already a sandbox applying on respondent's industry, the 93% of them know and appoint which is the main authority/ies that are required to define these potential sandboxes for their specific use cases.



Main solutions offered by living lab respondents.

According to replies, we can notice a clear predominance mindset towards a service - based approach, leaving aside other business models such as technology transference, prototyping, product co-creation, technological assets… resulting in a lower incomes diversification and higher costs due to lower margins associated with workforces, entering in direct competency with consultancy and engineering firms, with typically lower prices

and faster delivery in exchange, sometimes, of excellence expectations normally associated to University and Research centres with PhD and expert research personnel.

Main revenue stream from living lab respondents.

+40% of replies confirm public fundings exclusively as their source of incomes while only a 14% declares a mix of public-private source of incomes. None of the respondents declared private funding as their main source of incomes. This exposes an important gap between research and development outcomes with exploitable results, industry needs or marketable solutions.

Country of origin of the main solutions providers.

Almost 80% of respondents place their trust in national providers, demonstrating the importance of nearness when it comes to accept a challenge and build a solution.

Country of origin of the main challenge owners.

A huge 85% of respondents set forth a national porfolio of clients , highligthing the strong influence of language and culture when reaching new clients but showing also a physical frontier limitation lowering the impact generated, creation of a important country and economical dependence staking directly to living lab sustainability in time if they are not able to reach and engage with internation challenge owners.

Main activities carried out on living labs

It can be appreciated the wide variety and diversity of the involvement and impact pretended in the different dimensions of society, with a slight prevalence on technology.

Number of ongoing projects carried out by respondents living labs.

Replies to this questions illustrate and give us a rough idea of the workforce and productivity level of living labs, able to handle on average 2 to 4 projects simultaneously.

0-1	1
2-4	11
5-10	3
+10	0

Percentage of ongoing projects having a Challenge Owner demanding the solution.

Only 13% of respondent living labs have a customer or final user demanding the results of their projects. It means that the vastly majority of projects are not outcome-driven nor involving the final user in the co-creation process, key aspect in the living lab philosophy.

0-20%	4
20%-40%	4
40%-60%	3
60%-80%	2
80%-100%	2

Percentage of ongoing projects having Key Exploitable Results (KERs) defined.

Only the 20% of respondents declare they have defined the KERs in most of their projects, leaving a vast 80% actively working and investing resources in projects that do not have clearly defined beforehand the expected outcomes or the key exploitable results.

0-20%	3
20%-40%	3
40%-60%	2
60%-80%	4
80%-100%	3

Project's Technology Readiness Level (TRL).

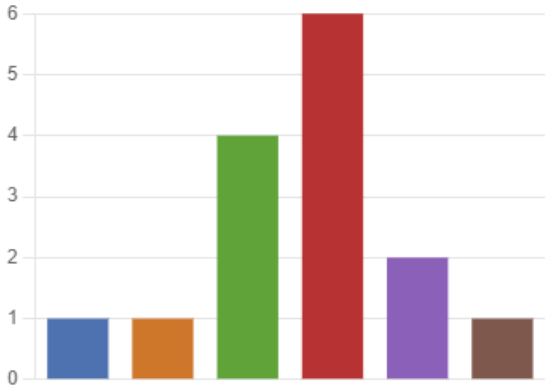
These results reveal that most of the projects (60%) being carried out are focused on prototyping, simulations and demonstration while the rest is equally divided between research and market approach activities (20% vs 20%), indicating an excellent coverage of the full lifecycle from idea to business.

1-3 (research)	3
4-6 (development)	9
7-9 (innovation)	3

Innovation degree of project outcomes.

The following chart represents the overall spectrum of solutions impact ranging from commodity (not new) to disruptive (new for the industry / world). According to respondents replies, we can observe a clear local + regional innovation which is very well needed by small and medium enterprises (SMEs) when it comes to keep up with the fast pace of nowadays economy and avoiding being displaced by other contenders and competitors.

Not new	1
New for us	1
New for my client	4
New in my territory	6
New for my industry	2
New for the world	1



4. Living Lab characterisation example

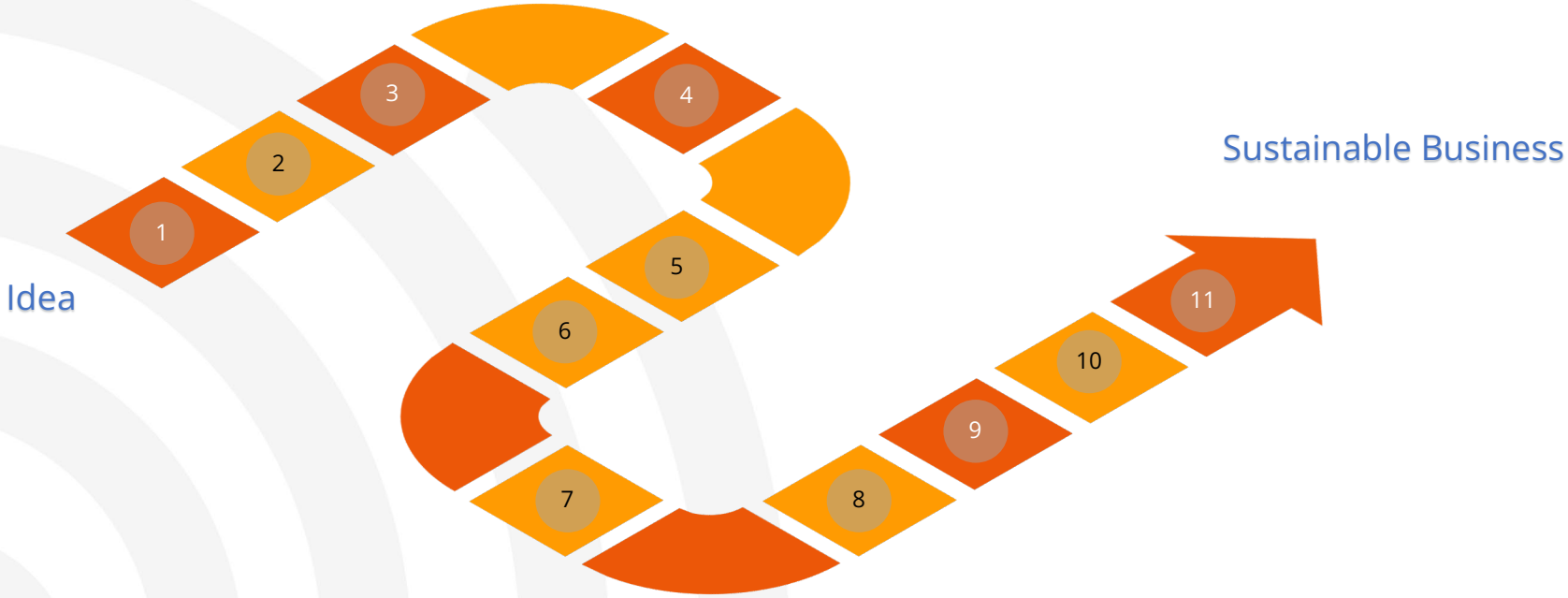
Livinglab Name	Bizlab
Livinglab Owner	Airbus group
Owner legal entity	For profit private entity
Main purpose	Offering company intrapreneurs and aerospace startups a place to transform innovative ideas into valuable businesses.
Global Challenge	Rule the skies, Industry competitiveness, Innovation, Resources optimization.
Field of interest	Industry 4.0, Cybersecurity, Manufacturing, logistics, new materials, unmanned vehicles.
Technology drivers	3D printing, Analytics, Internet of Things, Virtual Reality, Blockchain.
Industry targeted	Aerospace and Defense.
Main Activities carried out	Technology development, solutions prototyping, corporate innovation, startup engagement, company-building.
Type of activities	Technological + Business Models
Regulatory Sandbox applying	No
TRL seeked	4 – 8 (development + innovation)
Outcomes seeked	New for us New for my client New in my territory New for the industry New for the world

5. Living Lab characterisation canvas

Livinglab Name	
Livinglab Owner	
Owner legal entity	
Main purpose	
Global Challenge	
Field of interest	
Technology drivers	
Industry targeted	
Main Activities carried out	
Type of activities	
Regulatory Sandbox applying	
TRL seeked	
Outcomes seeked	

6. Implementation Roadmap

1. Draft an initial livinglab characterisation with early ideas and assumptions.
2. Draw your ecosystem map with the actors you have access to today.
3. Use the template from T3.1.0 to identify their roles according to the Open Innovation ecosystem (attached in Annex C).
4. Choose the topic of your livinglab venture and the global challenges / problems / industries / operation field you want to focus on and contribute to.
5. Identify the presence / absence of a Regulatory Sandbox applying in your industry.
6. Change your mindset from Need-driven to Problem-driven.
7. Survey the actors you have access to to understand their short-term challenges and actual pains.
8. Identify who are the Challenge Owners and who are the Solution Providers in your ecosystem.
9. Provide value to the challenge owner proposing them to be involved in a co-creation project including all the needed actors for each role of the open innovation ecosystem.
10. Address those pains and clearly identify your Key Exploitable Results (KERs) from the co-creation project.
11. Use the speed-dating cards to perform a self-assessment and make sure all of the questions are covered.


Idea
1
2
3
4
5
6
7
8
9
10
11
Sustainable Business

7. Annexes:

A. Survey Questions.

1. What is your full name.
2. Email.
3. Organisation.
4. LivingLab Name.
5. Name of the LL manager + email.
6. Technical leader for ongoing projects (if apply, e.g.: demonstrators) + email.
7. Which is the main purpose of the LL?
8. Name of the legal entity to whom the LL belongs to.
9. Type of legal entity to whom the LL belongs to:
    A. Public entity.
    B. Private Entity for profit.
    C. Private entity non-profit.
    D. Mixed for profit.
    E. Mixed non-profit.
10. Target Global Challenges that your LL wants to tackle: (e.g.: Circular Economy, Decarbonisation, Zero hunger, Education, Access to key resources…).
11. Which are your main action lines to tackle your target Global Challenge? (e.g.: Energy Transition, Smart Cities, Mobility, Biodiversity…).
12. Which technologies are you using/developing to create solutions for these challenges?
13. Name some individual challenges you have been asked to help solving?
14. To which industry/ies you think your solutions can benefit the most?
15. Are you interested in having a Regulatory Sandbox for your industry?
16. Does the industry/ies you are targeting have a regulatory sandbox?
    A. Yes
    B. No
    C. I don't know.
17. Which are the main authorities ruling the different regulatory sandboxes of your country?
18. List the products and services your LL is offering.
19. Where does the most of your incomes come from?
20. List your actual portfolio of Solution Providers.
21. List your actual portfolio of Challenge Owners.
22. From which countries does your portfolio of Solution Providers come from?
23. From which countries does your portfolio of Challenge Owners come from?
24. How do you reach/attract new Challenge Owners?
25. How do you reach/attract new Solution Providers?
26. Do your Living Lab perform activities related with the following category…?

A. Technological
B. Social
C. Open
D. Regulatory
E. Business Model

27. Number of projects (apart from Transnet ones) you are working on at this moment.
    A. 0-1
    B. 2-4
    C. 5-10
    D. +10
28. Which percentage of your ongoing projects already have a Challenge Owner demanding the solution?
    A. 0-20%
    B. 20%-40%
    C. 40%-60%
    D. 60%-80%
    E. 80%-100%
29. For which percentage of your ongoing projects have you defined its KERs (Key Exploitable Results)?
    A. 0-20%
    B. 20%-40%
    C. 40%-60%
    D. 60%-80%
    E. 80%-100%
30. List your LL portfolio of KERs (Key Exploitable Results) (e.g.: water management system for civil environment up to 150 liters per day).
31. Which is the main TRL (Technology Readiness Level) of your ongoing projects?
    A. 1-3 (research)
    B. 4-6 (development)
    C. 7-9 (innovation)
32. The main outcomes of the ongoing projects from our LL are:
    A. Not new.
    B. New for me.
    C. New for my client.
    D. New in my territory.
    E. New for my Industry.
    F. New for the world.

B. Speed-dating card design.

A downloadable pdf file can be found in the link below containing the full card deck with all the questions used during the workshop.

Link: xxxx.com

C. Roles in the Open Innovation ecosystem.