

Interreg
Alpine Space



O.T2.2 AS Alpine Campus

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RE	Restricted to a group specified by the consortium	
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1 ALPINE CAMPUS

Alpine Campus: A transnational modular learning system, which provides a toolbox of common tools, knowledge base, terminology, processes and plans to the quadruple-helix teams, to support the integration of the AS Alliances in joint innovation projects related to Smart Living.



Figure 1 Alpine Campus

The Alpine Campus is a platform for the AS alliances with smart topics. The Alpine Campus works like an umbrella for the alliances, and was defined, developed, used and optimized during the project time.

2 LiLAB IDEA

Living Lab: Physical regions, virtual realities, or interaction spaces, in which a stakeholder forms public-private-people partnerships (4Ps) of companies, public agencies, universities, users and other stakeholders, all collaborating for creation, prototyping, validating, testing of new technologies, services, products and systems in a real-life context.¹

Innovation Lab: An innovation lab is a semi-autonomous organization that engages diverse participants—on a long-term basis—in open collaboration for the purpose of creating, elaborating, and prototyping radical solutions to pre-identified systemic challenges.²

Living & Innovation Labs: This term, also written as LiLab, is a project term used to represent the various methodologies that can be used to enhance connectivity between, and empower quadruple helix actors in the pursuit of enhancing innovation (or improving the conditions for innovation) in the AS area, related to the topic of Smart Living.

¹ Westerlund & Leminen, 2011

² Stanford Social Innovation Review, accessed at https://ssir.org/articles/entry/innovation_labs_10_defining_features

Partners took influences from the theories of Living Lab & Innovation Labs to create a Lab model that works for their organisations, country stakeholders, and the topics of Smart Living most important for their regions.

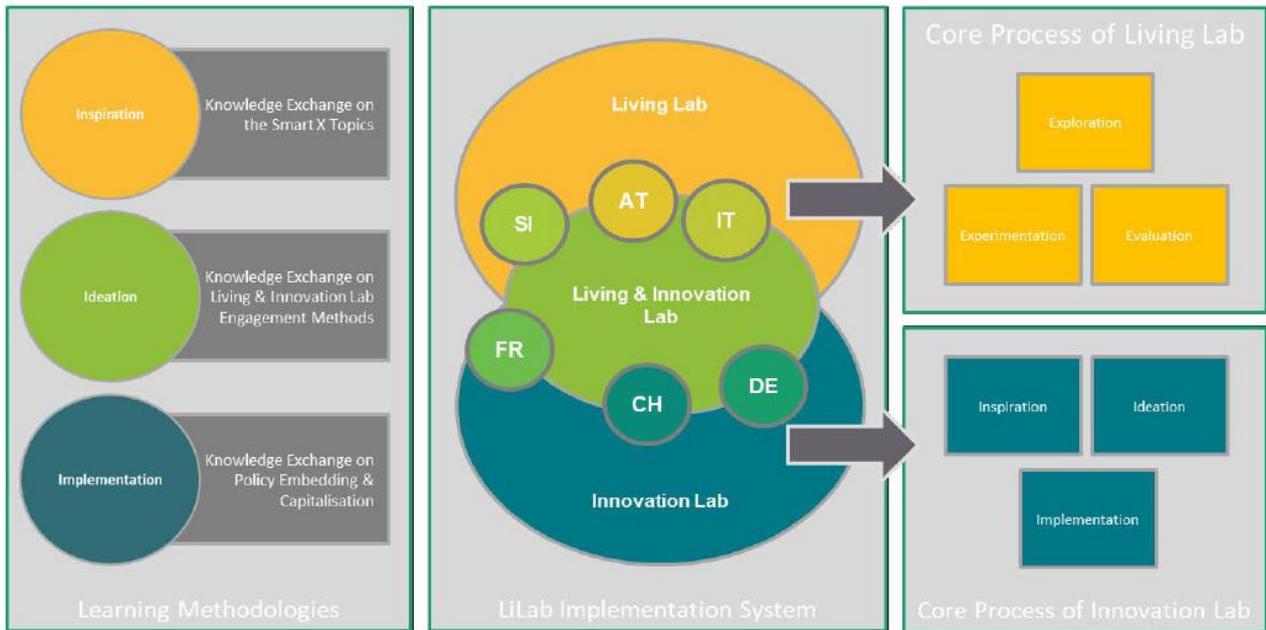


Figure 2 Living & Innovation Lab Venn-Diagram

The aim of the LiLab Ecosystem is twofold:

- 1) To create a innovation space where a menu of jointly agreed, common methods, can be tested.
- 2) To create a innovation space where partners and stakeholders can be brought together to identify and start implementation on tangible, joint-cooperation initiatives within each Alliance topic.

The LiLab becomes an eco-system of smart living excellence, where quadruple helix stakeholders share knowledge, co-create, and innovate to overcome common challenges faced by the Alpine Space region. The Labs generated transnational initiatives in content related smart “X” alliance topics, using a common set of tools, knowledge, terminology, processes and plans. **This common toolbox is known as the ‘Alpine Campus’.**

As demonstrated in Figure 3, the Living & Innovation Lab system is one part of three main ‘sub-outputs’ of the Alpine Campus. It is one of three elements which act as support structures for engagement and collaboration on the 10 Smart X topic (1) AS Task Force – the management / “People” structure, (2) the CARE4TECH Learning Hub – the tool structure, and (3) the Living & Innovation Lab System – the methodological structure.

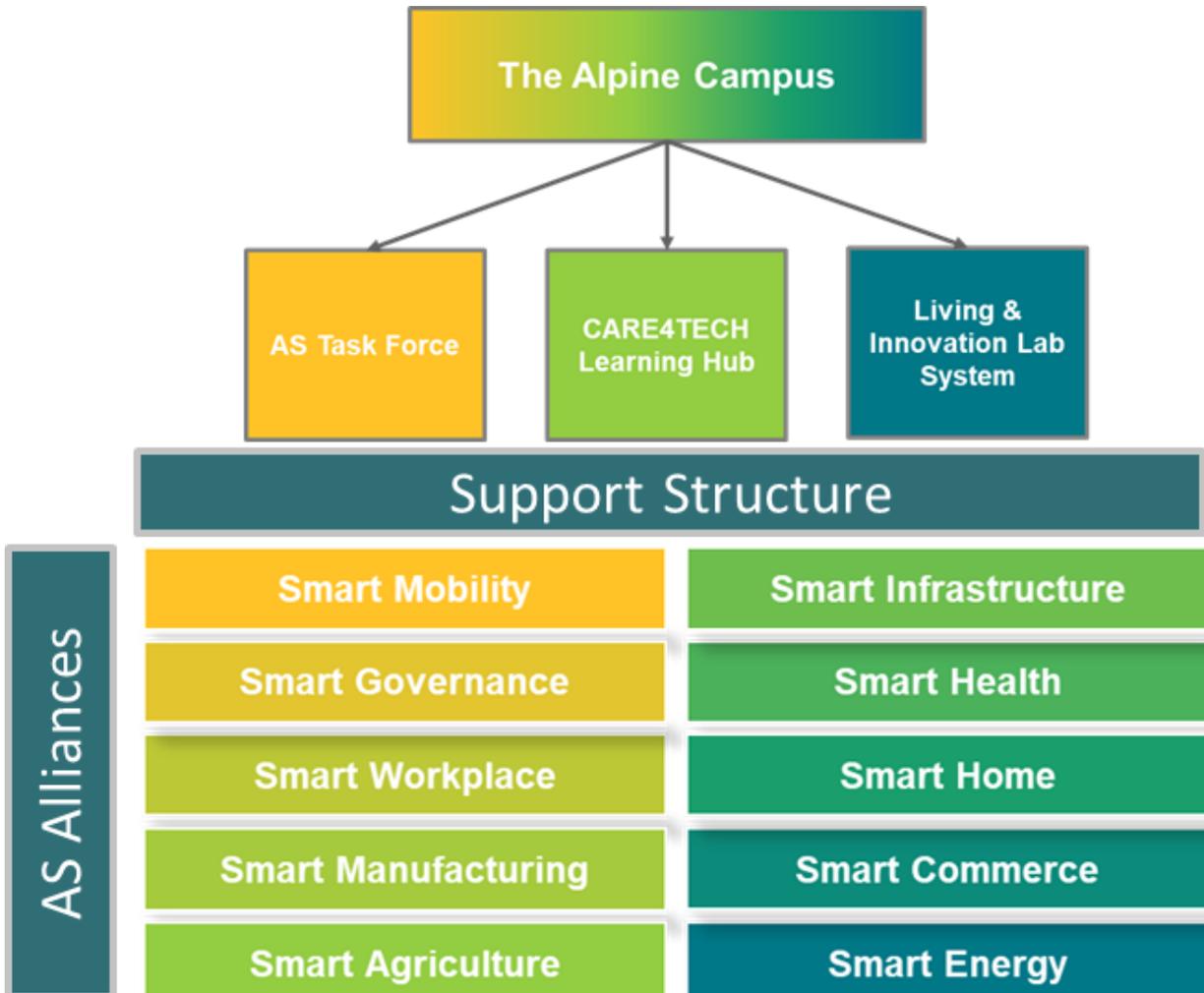


Figure 3 The Alpine Campus, which includes the Living & Innovation Lab System, acts as a support structure for the 10 Content Alliance Topics

3 AS TASK FORCES

The AS Task Forces are working groups of individuals and organisations who came together (physically and virtually) to define common challenges and common solutions for the work in each AS alliance.

In each of the 6 participating regions quadruple helix-based teams (project partners + selected target groups & stakeholders) are supporting to manage & integrate Alliances through joint innovation projects. The AS Task Forces are dynamic teams. In each running platform of the lilabs the partners invited potential new members. AS Task Force Fact Sheets was developed for each Alliances as a template. The idea is to describe profiles of existing experts and criteria to join the group.





SMART MANUFACTURING

[MOODLE COURSE](#) | [G4T WEBSITE](#)

ALLIANCE'S OBJECTIVE

Smart Manufacturing and the term of industry 4.0 are related to the knowledge and understanding of the changes required to meet the challenge of the 4th Industrial Revolution as well as the implementation of technologies and services into the working processes

SMART TOPICS

- internet of things
- robot technology
- ongoing individualization of mass production
- New business models

MOODLE



JOIN AS EXPERT OR STAKEHOLDER:

NAME & SURNAME	ORGANIZATION	ROLE IN ALLIANCE (EXPERT, STAKEHOLDER)
ADDRESS	PHONE	E-MAIL

CRITERIA TO JOIN

- Affinity with the Topic of Smart Manufacturing
- Agree that data are uploaded on the CARE4TECH Knowledge Atlas
- Agree to receive emails on CARE4TECH events and participate in at least one conference or workshop in 2019
- Agree to receive CARE4TECH newsletter
- Agree to receive emails on CARE4TECH events and participate in at least one conference or workshop in 2019
- Other: _____

DATE/SIGNATURE

Figure 4 Task Force fact sheet example

4 LEARNING HUB

The CARE4TECH Learning Hub is a systematic support measure for project partners & stakeholders to upgrade their skills and knowledge related to Smart Living Technology, across the whole project. For this the CARE4TECH Learning Hub built a mixture of online and face-to-face collaboration tools and activities through the project lifetime. Individuals with different skills and perspectives can connect, share and innovate on the topic of Smart Living Technologies. The three modules, developed across the lifecycle of the project, was used to enhance the project partners & their stakeholders to interactions over the 11 Smart Living Alliance topics.

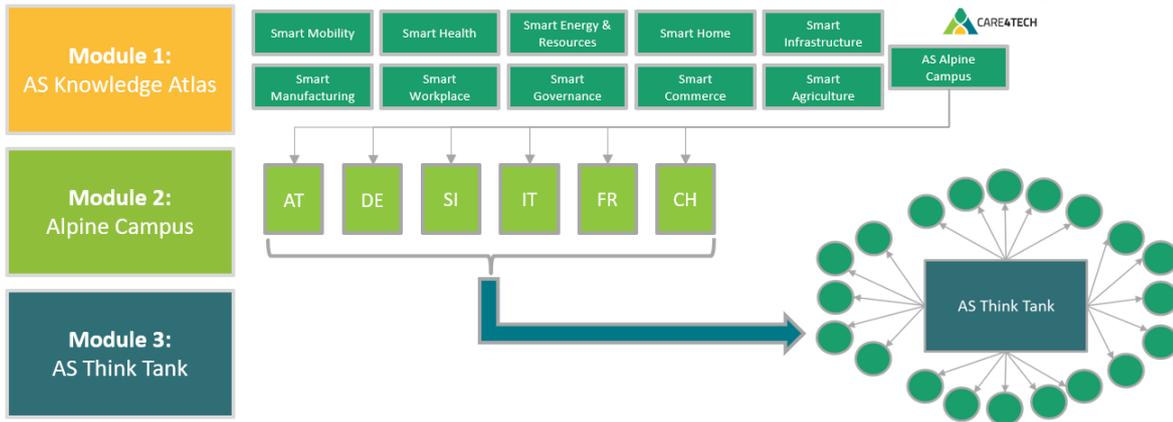


Figure 5 Care4Tech Learning Hub

Module 1 of the CARE4TECH Learning Hub, is focused around the concept of the AS Knowledge Atlas. The partners developed a visualised mapping tool, the so called Hypertree: <https://evocado.evolaris.net/visualization/> So the project group got a rich amount of knowledge from across the Alpine Space on the current state of excellence related to Smart Living Technologies. These early conversations with key stakeholders in the regions start to galvanize SWOT analysis, helping each Partner understand what the core opportunities and strengths of their area are.

Module 2 of the CARE4TECH Learning Hub is linked to the Alpine Campus and is best aligned to the ideation phase of human-centred design thinking. As central platform and online-learning tool the partnership set up a “moodle space” <https://moodle-c4t.evolaris.net/>, where all partners provided details on the current status of their knowledge, in association to the Smart Living Technology Alliances. This modular learning system based on Living & Innovation Labs; provided the support to the 11 quadruple helix teams (AS Task Forces). Throughout this module a calendar of online exchange (via Slack, Skype and Trello), and face to face exchanges in the Living & Innovation Lab Open Days- took place. The moodle is the central location for coordinating the further exchange and is also providing storage for the documentation and videos from Lilab activities.

Module 3 of the CARE4TECH Learning Hub is the AS Think Tank. With this permanent policy & stakeholder platform the partners formed a strategic roadmap linked to leading EU initiatives, which uses the knowledge/specialisation of the Partners and project stakeholders to lead to mature AS innovation policy.

CARE4TECH Learning Hub (Moodle):

Tool	Functionality				
	An interactive space for knowledge gathering & sharing on Smart X Topics	Share knowledge/ documentation on success of Engagement Techniques	Tests / Competency Matrix on Smart X & Engagement Topics	A common platform to link all tools, buttons to all common tools	New Functionality Determined by Partnership...

5 LIVING & INNOVATION LAB SYSTEMS

5.1 AUSTRIA

The Lilab follows an open innovation approach along the entire innovation process, from the conception phase to the exploitation and anchoring of solutions on the market. This approach concerns methods of working, collaboration with external partners and stakeholders, experimental spaces as well as ways of disseminating results. The result is a user-centered open innovation ecosystem allowing SMEs to benefit from access to information, physical resources, methods/research knowledge, process management as well as better exploitation and anchoring of their innovations.

The Living Lab applies a quadruple helix approach, proactively involving end-users, researchers, companies and policymakers (public administrator/government) in innovation processes. It follows an internal principle of stakeholder openness in terms of benefit for all involved stakeholder groups and an external principle related to proactive and democratic knowledge transfer as well as openness for new partnerships.

The knowledge of potential users of future innovation is systematically integrated by including end-users over the entire process, including requirement analysis, concept development, implementation and evaluation process. Researchers have the necessary infrastructure, tools and support mechanisms at their disposal to successfully implement open innovation strategies. Knowledge exchange and technology transfer between the Lilab and linked research institutions is implemented in a regular and structured manner on a regional and interregional level. Furthermore, the Lilab accompanies SMEs in their research activities providing methodological know-how and infrastructure as well as a network comprising diverse stakeholders which allows for a complete lifecycle approach. Local and regional policy makers benefit from an innovation ecosystem which follows a democratic, citizen-science-based approach and thereby supports social development processes.

The Lilab has taken over an important role in creating awareness on open innovation processes in the (regional) academic stakeholders, but also among enterprises, policy makers, and the general public. In the last year, the Living Lab was presented regularly at fairs, public events, and meetings with relevant stakeholders. The Demonstration Lab of CUAS is open for visits of the general public. It has been regularly visited and demonstrated to groups of pupils, senior citizens, etc. Project results are disseminated in scientific publications in a timely manner and presented at thematic congresses and public events. Progress and results of research activities are published in scientific papers and journals. Additionally, a comprehensive set of communication tools is used to make the information available to a wider public. It is published online on several websites, in social media channels, in newsletters and press articles. There exists a wide range of print material (flyers, roll-ups, etc.) that are displayed and distributed at events and meetings.

Innovative Exchange has been promoted on various levels:

- Integration of citizens in large scale pilot tests
- Organization of Open Days, workshops and meetings including all quadruple helix stakeholders
- Organization of workshops for citizens
- Participation in congresses, fairs, and relevant external events

The Lilab has initiated collaboration on the development of more than 10 new joint initiatives. At least 5 of them will already start to be implemented this year.

The Lilab has applied for membership with the European network of Living Labs and has been accepted. Furthermore, CUAS and Evolaris participated in study visits: iHomeLabs in Luzern on 8 April and NEST (EMPA) in Zurich on 10 April 2019. These allowed for information exchange and transfer of best practice with international high quality partners. Both PPs also participated regularly in international conferences, fairs and congresses. They organized several meetings and workshops with international high quality partners. The CARE4TECH Final Conference will be organized as high level international event including many partners from all over the Alpine Space region.

There has been ongoing collaboration with different cities in several projects. Concrete steps have been undertaken to elaborate projects in the field of Smart Health and Wellbeing together with the region of Carinthia.

5.2 FRANCE

The LiLab is focused on Smart Plastics topics, which the included several Smart X topics and so multiply interaction between these topics. The LiLab gather several innovation players, which provide learning services such as event organisation, networking between companies the goal is to support innovation and cooperation between companies and other innovation players.

The role of LiLab partners and especially Plastipolis is to support innovation project development and especially cross-thematic projects. LiLab partners organise international actions in order to create connection with other international organisations. In October 2018, Plastipolis brought 4 companies to Fakuma tradeshow in Germany and introduce them to cluster organisation. Plastipolis also organised focus group on Smart Plastics and on Composites during October and November 2018.

Plastipolis participate to the political event European project organise by Auvergne-Rhône-Alpes region on October 2018, on have the opportunity to introduce Care4Tech project and Smart topics on his booth.

The Lilab helped Plastipolis develop their network and competences on the Smart Living topics, such as Smart Manufacturing, Smart Energy and Smart Plastics. On the first topic, Smart Manufacturing, a consortium of regional clusters gathers twice a year to focus on Industry 4.0, and exchanges on best practices experimented by regional companies in order to find synergies and project opportunities between regional players. These meetings are supported by the Regional Council, giving also information to policy makers on the development and future strategies needed by the companies and the clusters.

Furthermore, through the Smart Plastic Congress and the Plastronic meeting, the launch of the Digital Innovation Hub on Smart Plastics was one of the final actions of the French Lilab, giving it more visibility and promoting the Care4Tech actions within the local, regional and national networks. This DIH is also supported by regional policy makers.

Finally, there was a meeting of the Smart Plastic network during the K fair in Düsseldorf in October 2019, and during the Non-Metallic Symposium a special attention was given also to renewables and Smart Energies.

Plastipolis will continue working on Smart living technologies, within the Vanguard initiative on Efficient and Smart Manufacturing, together with AFIL, and at regional level with the continuous improvement of the Digital Innovation Hub and the support on Smart Manufacturing and Smart Plastics activities.

5.3 GERMANY

The LiLab is built by two regions (Baden-Württemberg, Bayern) and it covers two smart x topics (smart production, smart mobility). Within the German LiLab various events including smart mobile application, the open day at microTEC Südwest cluster conference, the workshop on smart health were organised. BayInno and HS Kempten partnered in congresses and workshops, contacted with new stakeholders due to new smart mobility topics and partnerships. In Bavaria the CARE4TECH projects, the learning tools and various platforms were presented at the BarCamp Holzforum and Digitalization, COSMOS – Conference on Smart Mobility Services and CoFAT – Conference on Future Automotive Technology.

Furthermore, the LiLab supported multi-level Innovation Learning. Within the German LILAB all events contributed to an exchange of innovative topics. Various types of stakeholders were involved and had a fruitful, deep exchange on best practices. The Smart Forum summarized the findings of some of the C4T partners and gave a good overview.

The LiLab supported the development & implementation of joint cross-thematic projects. Cross thematic activities could be developed jointly with IoT4Industry, where mTSW is also partner (www.iiot4industry.eu). Several Projects have been created between Alpine Space regions as well.

The HKE has participated in a number of cross-thematic projects (smart mobility, smart manufacturing, smart energy and smart agriculture) for project applications as e-SMART, FAVAS, A-RING, MOTENTOU, OmniE, FMOW.

BayInno task is amongst other things the cross cluster coordination for the Bavarian Cluster initiative and therefore pushing common projects. Furthermore, BayInno is active in European cross thematic projects, partly together with HKE.

The LiLab anchored BayInno, mTSW, HKE & CARE4TECH to international, high-quality partners. mTSW BayInno, HKE: Regular Exchange with partners on an international level has taken place. International projects in the frame of IoT4Industry will or have started. Projects in Smart Mobility and Smart Manufacturing have been applied with partners from the Alpine Space region. The CARE4TECH-heterogeneous partnership has shown the synergies between the topics and partnerships as advantages.

Bavarian and Baden-Wuerttemberg use the regional cluster initiatives to extend the LiLAB network. Policy leader workshops in Bavaria and Baden-Wuerttemberg take place regularly, the cluster initiatives in both regions are under responsibility of the ministries of economy, 1-2 annual meetings take place to discuss political and industrial effects within the cluster policies. In addition, the participation in the EU Cluster Conference in Romania contributed to a better political understanding.

5.4 ITALY

Within the LitalyLab it was possible to be in touch and exchange best practices with other stakeholders and partners from the Smart X topics: Workplace, Mobility, Infrastructure and Manufacturing. The activities have been accomplished thanks to the several workshops, events and the 3 Open Days organized since the LitalyLab foundation.

During the workshops, events and open days, continuously new ideas and innovations were presented to quadruple helix stakeholders. For example, during the workshop with the Parsons Design School (New York), students from another context (product design for high-end and expensive products) learned to understand the problems and challenges of local enterprises from the Alpine Region. This exchange helped both sides (i.e. students and entrepreneurs) to take a different point of view, to widen their horizon and receive new inputs for their products.

Periodical workshops and online sessions have been organized, mainly led by Alliance Task Forces, both at regional and interregional level. These activities fostered the pre-conditions for the development of joint-thematic projects. Actually, at least 2 project ideas have been submitted.

The LitalyLab activities helped attract an international and very diversified audience to our events such as the Internationales Forum Mechatronik (September 2018), the Conference “Digitalization in Textile Industry” (October 2018) or the KlimaMobility Congress (January 2019).

Some of the workshops organized within the LitalyLab were targeted to policy makers, in order to raise awareness and political understanding on the main interesting interregional topic, such as Artificial Intelligence or Electric Mobility. These activities and the link with policy makers has been facilitated also thanks to the involvement of LitalyLab main actors in European Initiatives, such as Vanguard Initiative and EUSALP. These networks have been periodically involved within CARE4TECH activities too.

5.5 SLOVENIA

The conference on the thematic of smart Agriculture helped us learn more about new ways of cooperation and also the facts how to include regional stakeholders into the digitalization. On other hand the Ice breaking event was organized to motivate local organization and especially SMEs into the digitalization process on the thematic of Smart Manufacturing. This way topics of Smart Agriculture and Manufacturing achieved some new perspectives, with organization visiting and seeing some best practices from Slovenia and also abroad (Austria, Serbia, Germany, ...)

In the topic of Smart Home, LiLab has served as a platform to begin having discussions (mostly informal) through a focus group format with national stakeholders in the sector.

All events organized in this semester were focused on multi-level innovation learning and cooperation. Conference on thematic of Smart Agriculture included close to 100 people, with attendees coming from

different type of organization (SMEs, Business support organizations, Research organizations, Policy level organizations, etc.). This way we were able to present different aspects and views on the digitalization in one of the older economic sectors, which Agriculture represents.

Study visit to experience best practice examples of smart manufacturing in Austria helped us learn how multi-level innovation learning is supported there, and how this approach can be transferred to Slovenia. Examples of Campus02, Evolaris, PIA automation are just some great examples how multi-level approach is ensuring great results on research level and also economic level.

By working actively on both thematic topics (Agriculture and Manufacturing) we are eagerly finding new opportunities on how to join cross-thematic projects. The conference was due to this fact also visited by partner HKE, where we discussed some potential new projects and how to transfer their knowledge from Germany to Slovenia. On the thematic of Smart Manufacturing we are in close contact with partner AFIL and mtSW who are most active on this thematic. Collaboration between existing projects of all three organizations was discussed and potential new applications have been discussed and identified.

Discussions with a leading national organization on Smart Home topic led to identification of synergistic initiatives either running or under development. Future discussion will elucidate on which of these initiatives a joint approach would be most beneficial.

The conference on smart Agriculture was as mentioned visited by close to 100 participants. Among them we had visitors from two of the Slovenian ministries, with the state secretary being present. On the other hand we also had a speaker from European Innovation Partnership for Agricultural productivity and Sustainability (EIP-AGRI), which has been launched in 2012 to contribute to the European Union's strategy 'Europe 2020' for smart, sustainable and inclusive growth. On the other hand we also managed to attract two of the biggest players in Europe, which are mainly working on the topic of digitalizing the agriculture and food production area (BIOSENSE institute and Campden BRI). By all this we are sure to anchor our organization and also CARE4TECH project at international partners.

As mentioned in previous sections the conference was attended also by authorities from European Union (EIP AGRI) and also by people from two ministries in Slovenia (Ministry for Agriculture, Forestry and Food and Ministry of economic development and technology). All this provided great opportunity to enlighten the Smart living priorities and provide some answers on what digitalization of different topics can offer society in the future.

Meetings with Strategic Research and Innovation Partnership on the topic of Smart Buildings, a partnership supported by the government is a first step in the direction of bringing policy makers and (mainly) SMEs together.

5.6 SWITZERLAND

The Living Lab is focussing on promoting interactions and information flow between the stakeholders of the quadruple helix, but in particular on networking SMEs and start-ups with other stakeholders and thus promoting innovation and technology transfer.

Concerning the methodology, it is implementing a mix of permanent interviews for “spearhead” based networking and public events. Special attention is given to the former and around 100 interviews are being held per year with SMEs and start-ups (who are mostly tenants of the Technology Park). This enables the staff to carry out efficient networking and point out potential synergies to all members of the quadruple helix. Ideas and new approaches were continuously evaluated and integrated based on the experience of other Care4tech partners. The tools introduced in the project were of great value and inspiration. A process is being established to systematically implement video interviews to convey the capabilities of the SMEs, slack has been used in the living lab and Trello is further evaluated for internal processes and planning of events.

During the open days or the events, continuously new ideas and innovations were presented to quadruple helix stakeholders. The first open day was organized as a fair during which around 35 companies presented their innovations and capabilities to a general public. Another highlight was the Medtech networking day which was attended by over 70 people including attendants from Lausanne and the South of Germany.

A challenge room was set up during the initial phase of the living lab, where founders could “try out” to be a company for a few weeks or to provide more dedicated coaching.

Furthermore, LiLab Suisse communicated the care4tech project and local competencies and capabilities to other international partners. Special exchange with a Chinese partner and presentation of business ideas in China took place. A regular exchange with the canton of Zurich guarantees to meet the regional technology policies.

6 REFERENCES TO RELEVANT DELIVERABLES AND WEB-LINKS

D.T2.1.4 Task Force Fact Sheets

D.T2.2.1 CARE4TECH Living & Innovation Lab Guidelines v3.0.pdf

D.T2.3.1 CARE4TECH Living and Innovation Lab Report_Run Report FINAL REPORT_CH_v1.2.docx

D.T2.3.1 CARE4TECH Living and Innovation Lab Report_Run Report Quarterly Slovenia_final.docx

D.T2.3.1 CARE4TECH Living and Innovation Lab Report_Run Report FINAL REPORT_v1.3_Italy.pdf

D.T2.3.1 CARE4TECH_Final_RunReport_DE_BY_BW_final.pdf

D.T2.3.1 Final Lilab Report_Austria_L2 Health and Wellbeing_final.pdf

D.T2.3.1 CARE4TECH Living and Innovation Lab Report_Run Report Q2.docx

<https://moodle-c4t.evolaris.net/>