



Deliverable 2.3: Capacity building events of Phase 2 report

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Executive Summary

Skills2Scale is a project designed to empower Higher Education Institutions (HEIs) to play a leading role in the development and implementation of Beyond 5G networks and applications. Through a range of activities such as training programs, peer-learning events, mentoring, and acceleration, the project aims to equip HEIs with the knowledge, skills, and networks necessary to support the development of the Beyond 5G ecosystem.

The project's goal is to foster institutional engagement and change, strengthen partnerships, contribute to developing innovations and businesses, enhance the quality of innovation and entrepreneurial education, and support knowledge sharing. By doing so, the project aims to develop a skilled workforce in the field of Beyond 5G technology, which will help drive innovation and economic growth.

This deliverable presents an overview of capacity building events of phase 2 including detailed summaries from 2 physical peer learning events organised in Liberec, Czech Republic and in Thessaloniki, Greece as well as descriptions and key points from 10 local stakeholder events.

The peer learning events portrayed the local and transnational ecosystem in B5G technology by inviting participants from Higher Education Institutions as well as other local stakeholders that contribute to the development of the 5G and Beyond ecosystem. To facilitate capacity building and strengthen partnerships, site visits to local incubators were arranged. The combinations of ecosystem presentations and site visits allowed participants to get a good understanding of strengths and weaknesses of the regional ecosystem. This knowledge exchange is crucial since host organizations can learn from external stakeholders about best practices utilized at other HEIs that might improve the local ecosystem.

The local stakeholder events built networks with HEIs and external partners in the field of B5G technology. Major local actors such as local business incubators, companies, and the government, took part in the events to discuss potential partnerships with HEIs in technology, innovation and entrepreneurship. HEIs shared the knowledge and ideas gained in PLEs to their local ecosystems. The networking events deepened cooperation with HEIs and local external stakeholders to ensure the thriving of the local B5G technology ecosystem.



About the EIT HEI Initiative

The EIT HEI Initiative: Innovation Capacity Building for Higher Education has been designed with the aim of increasing the innovation and entrepreneurial capacity in higher education by bringing together HEIs in innovation value chains and ecosystems across Europe. A central philosophy of the EIT is the integration of the EIT Knowledge Triangle Model into all its activities. HEIs selected to participate in the HEI Initiative will also leverage and use the Knowledge Triangle Model as an enabler, facilitating the creation of systemic, institutional change. Additionally, HEIs selected to participate in the HEI Initiative will contribute to and leverage Smart Specialisation Strategies, the Regional Innovation Impact Assessment (RIIA) Framework, as well as align to the goals of the EIT Regional Innovation Scheme (EIT RIS). This will strengthen the links between HEIs and their local and regional ecosystems and provide an impetus to leverage additional funding sources beyond the HEI project funding period of the selected HEI projects. HEIs are encouraged to prepare applications which will support the development and implementation of six Actions in their institutions, cumulatively leading to institutional transformation, an increase in entrepreneurial and innovation capacity, and integration with innovation ecosystems.



1 Introduction

D2.3 reports the 2 transnational Peer Learning Events (PLEs) and 10 local stakeholder events organized in this second phase. The PLEs brought together Skills2Scale project partners Universitat Politècnica de València (UPV), Technical University of Liberec (TUL), Uzhhorod National University (UNU), University of Lapland (LU), Hellenic Entrepreneurship Award (Envolve), National Centre for Scientific Research Demokritos (NCSR), FOGUS Innovations & Services P.C. (FOGUS) and external partners to share experiences and best practices in Beyond 5G technology, igniting innovation and expanding their networks. The PLEs in phase 2 were organised by TUL in Liberec, Czech Republic (23-24/4/2024) and by Envolve in Thessaloniki, Greece (22-23/5/2024), University of Lapland supporting the local hosting institutions. The 2-day events included peer learning workshops, capacity building activities, and study visits to promote knowledge sharing with partners and local ecosystems.

Local stakeholder events were organised to bring HEIs and external partners from the local/regional ecosystem together to discuss potential partnerships. The local events operated as a platform for meeting and networking, knowledge sharing and exploring collaboration opportunities in the field of B5G technology. These events not only strengthened existing partnerships between HEIs and external partners but also initiated new contacts with external stakeholders on the theme of B5G technology. Each HEI organised a minimum of 2 networking events for at least 15 participants. The number of local stakeholder events arranged in phase 2 was 10, TUL facilitating 2, LU arranging 2, UNU organising 4 and UPV hosting 2 events.

The purpose of this deliverable is to present a compilation of key takeaways that highlight the opportunities and challenges of Higher Education Institutions in regard to 5G and Beyond ecosystems. These highlights are provided in bullet-point format supported by visual impressions from the events.



2 Peer Learning Events

2.1 Liberec, Czech Republic

On the 23rd and 24th of April 2024, the Technical University of Liberec (TUL) hosted 15 representatives of partners from the Skills2Scale project and nearly 40 representatives of TUL and the regional innovation ecosystem. The event aimed to:

- Share experience and the best practices in the fields of education, research, and innovation.
- Ignite inspiration among Higher Education Institution staff to explore new pathways and opportunities to foster students' entrepreneurship and innovation.
- Stimulate the development of the innovation ecosystem in our home region and inspire the local, regional, and national stakeholders.
- Learn more about the upcoming activities of the European Innovation Community under EIT Urban Mobility and EIT Health in the region.

2.1.1 Agenda

Day 1 – Tuesday 23rd April

Time	Topic
09:00 – 09:15	Check-in, welcome Location: TUL Building L (CxI)
09:15 – 11 :30	S2S plenary session <ul style="list-style-type: none"> • Eliška Bajgarová, EIT Urban Mobility East Innovation Hub (~15 min) • Tina Iglicar Kubalik, EIT Health Hub Czech Republic (~15 min) Presentations of S2S members <ul style="list-style-type: none"> • Nadiya Boyko, Uzhgorod National University (~15 min): Potential Opportunities for Scientific Cooperation • Carlos E. Palau, Universitat Politècnica de València) (~15 min): Distributed Real Time Systems and Applications Lab (SATRD) • Harilaos Koumaras, NCSR D (~15 min): FRONT Research Group of NCSR D: Recent Projects Participation and Results • Kaisa Lammi, Lapland University of Applied Sciences (~10 min) • Laura Ulatowski Arctic Centre, University of Lapland (~5 min): Arctic Societies Programme at the Arctic Centre • Nikos Passas Fogus Innovation and Services (~15 min): Recent Projects Participation and Results in the Area of beyond 5G • Michail Mandamadiotis (Envolve) (~15 min)



11:30 – 13:00	Lunch Buffet on site
13:00 – 14:30	5G related Use Cases at TUL <ul style="list-style-type: none"> • Jindřich Cýrus (AGV) • Tomáš Martinec (Hololens) • Jiří Šafka (3D print)
14:30 – 15:30	Outdoor presentation Racing Formula TUL (Ladislav Horálek) Location: Univerzitní nám.
15:30 – 16:30	Coffee break & Student Business Club Presentation (Ondřej Moš & Eduard Seibert) Location: architectural atelier (TUL Building F)
16:30 – 18:00	TULab Workshop (Jana Vitvarová & Jan Koprnický) Location: TUL Building A
19:30 – 22:00	Dinner & Social evening Location: Franz Josef Lounge at Hotel Clarion Zlatý Lev

Day 2 – Thursday 24th April

Time	Topic
09:00 – 10:00	Entrepreneurial Spirit of the Liberec Region (Jaroslav Demel) Location: Liebieg Manor
10:00 – 10:30	Walking tour to Lipo.ink
11:00 – 11:30	Coffee break and Lipo.Ink Presentation (Philipp Roden) Location: Lipo.ink
11:30 – 12:45	Lipo.ink Regional Startup Tour <ul style="list-style-type: none"> • Matěj Karásek (Flapper Drones) • René Gubarčok (Hardwario) • Jiří Kula (NullSpaces) Location: Lipo.ink
12:45 – 14:00	Lunch Buffet on site Location: Lipo.ink
14:00 – 16:00	Wrap-up & Farewell to Guests Christina Skoubridou : Collaboration on Proposals of Future Projects Location: Lipo.ink

2.1.2 Venue

On the first day the meeting was held in TUL Building L (CXL), including sessions in Buildings F and A. The second day included study visits to different locations.



2.1.3 Summary

On the first day, the TUL innovation ecosystem was showcased. Key actors include TUL faculties, the Institute for Nanomaterials, Advanced Technologies, and Innovation (CxI TUL), and TUCTUL, which applies scientific knowledge and technologies from TUL in practice. National representatives of EIT Urban Mobility and EIT Health presented their activities in the Czech Republic, including those TUL is now involved in through the Skills2Scale project.

TUL shared experiences with best practices in 5G use cases. Participants visited research departments of the Institute for Nanomaterials, Advanced Technologies, and Innovation TUL. In the Department of Mechatronic Systems and Robotics and the Department of Vehicles, projects involving automated guided vehicles and augmented reality for human-robot collaboration were presented. The latest innovations in additive 3D printing technology were showcased in the 3D Technology Department.

Additionally, attention was given to TUL's best practices in fostering entrepreneurship, including:

- [Formula Student TUL Racing Project](#): A team of around 30 students from the Faculty of Engineering, Faculty of Mechatronics, and Faculty of Economics participates in the international Formula Student competition, gaining experience in design, construction, testing, racing, fundraising, and promotion.
- [Student Business Club](#) (SBC TUL): Promotes student entrepreneurship at TUL, fostering a community of entrepreneurial individuals. SBC TUL offers informal education on entrepreneurship and hosts an annual competition for the best student start-up.
- [TULab Creative Workshop](#): Open to TUL students and staff across faculties, providing access to new technologies and opportunities for creation and learning, operating on a by-students-for-students principle.

Each component of the innovation system was followed by questions and discussions, allowing PLE participants to engage with key figures in the TUL innovation ecosystem.



Figure 1. Impressions from the presentations and discussions held on the first day (I)



Figure 2. Impressions from the presentations and discussions held on the first day (II)

On the second day, PLE participants visited the low-threshold [creative community center Kontakt in Liebieg's Palace](#). There, a presentation and debate on the region's entrepreneurial spirit took place, highlighting the strong industrial base in textiles and mechanical engineering. The final stop was the regional business incubator [Lipolnk](#), established in 2017 with support from the Liberec Regional Authority and TUL. Lipolnk, a non-profit organization, currently incubates about two dozen new companies, providing free consulting services, an incubation program, a coworking center, and organizing events for the regional entrepreneurial community. Many incubated entrepreneurs are TUL graduates. Participants met startups and young technology companies from the region, including [Flapper Drones](#), [Hardwario](#), and [NullSpaces](#).



Figure 3. Lipolnk presentation

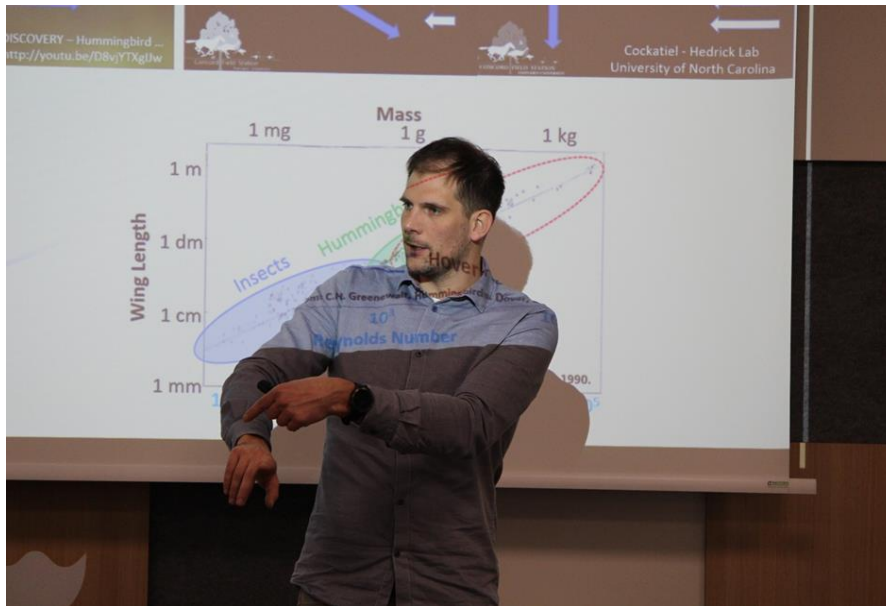


Figure 4. Flapper Drones presentation

The Peer Learning Event in Liberec concluded with a discussion on key topics for continuing and deepening the cooperation between Skills2Scale partners.



Figure 5. Skills2Scale project partners at Technical University of Liberec



2.2 Thessaloniki, Greece

The objective of the peer learning event organised by Envolve in Thessaloniki, Greece on the 22nd and 23rd of May, 2024 was to:

- Exchange experiences and best practices in education, research, and innovation.
- Inspire higher education institution staff to discover new ways to promote student entrepreneurship and innovation.
- Encourage the growth of the innovation ecosystem in our region and motivate local, regional, and national stakeholders.

The highlights of the event was the visit to the newly established Accelerator of the Aristotle University of Thessaloniki, where student startups make their first steps in their entrepreneurial journey. Additionally, the Consortium visited one of the many research labs of KEDEK, that focuses on 5G connectivity. Moreover, partners had the chance to experience the SmartHome Project in CERTH, as well as the Innovation 4 Growth (I4G) Incubator of Thessaloniki, the earliest incubator of Greece, established in 2003. The last station was I4byDesign, a competence centre, directly linked with the market, that enhances the skillset of the manufacturing workforce in the 4.0 Industry

2.2.1 Agenda

Day 1 – Wednesday 22nd May

Time	Topic
10:00 – 10:30	Welcome Location: Ok!Thess
10:30 – 11:30	Plenary Meeting
11:30 – 13:00	The Regional Innovation Ecosystem <ul style="list-style-type: none"> • Stavros Mantzanakis, Regional Authority of Central Macedonia • Byron Chrysovergis, Aristotle University • Nikos Katsiadakis, ThessIntec • Yiannis Kompatsiaris, CERTH • Christina Skoubridou, Envolve • Antonios Ilias, Ok!Thess
13:00 – 14:30	Lunch break
14:30 – 16:00	Start-up support Initiatives <ul style="list-style-type: none"> • Evangelos Kosmidis, Loggerhead Ventures • Byron Chrysovergis, WalkAuth • Theologos Prokopiou, I4G • George Kokkas, Entrepreneurship Hub American College of Thessaloniki, ACT



	<ul style="list-style-type: none"> • Kostas Tramantzas, Alexander Innovation Zone • Grigoris Chatzikostas, Foodscale hub
16:00 – 16:30	Coffee break
16:30 – 17:30	Deep Tech Regional Innovation Valleys <ul style="list-style-type: none"> • Eirini Ozouni, RInnoValleys Presentation • Regional Development Fund of Central Macedonia, DeepTechValleys Presentation • Grigoris Matenoglou, i4bydesign • Nick Kanopoulos, Brite Solar – Solar Technologies
17:30 – 19:30	Refreshment Drinks - Boat Cruise (Optional)
19:30 – 22:00	Dinner & Social evening Location: To Elliniko, Kallari 9 Thessaloniki

Day 2 – Thursday 23rd May

Time	Topic
09:15 – 9:45	Study Visit to WalkAUTH
09:45 – 10:15	Study Visit to i4G
10:15 – 11:00	Coffee break
11:00 – 12:00	Study Visit to CERTH
12:15 – 13:00	Study Visit to ΚΕΔΕΚ
13:00 – 14:30	Lunch break
15:00 – 16:00	Study visit to i4bydesign
16:00 – 17:00	Closing and next steps

2.2.2 Venue

The Peer Learning Event lasted two days. On the second day, rather than a venue the Consortium was on the move the entire day, having study visits in all the significant stakeholders of the Deep Tech Innovation Ecosystem of Thessaloniki. The venue of the first day, when the plenary meeting and some very interesting guests that participated in insightful panel discussions took place, was Ok!Thess. It is the biggest innovation hub of the city, the leading startup hub and a catalyst for the growth of the local innovation ecosystem. It helps entrepreneurs bring innovative ideas to market through an acceleration program that includes training, coaching, matchmaking with mentors and access to capital. Very often, it hosts events for the innovation community to meetup and to allow like-minded peers to meet and connect. Ok!Thess is located in the eastern side of the city, full address: Komotinis 2, Thessaloniki.



2.2.3 Summary

The PLE of Thessaloniki was the last one. For this reason, the host wanted its impact to be as high as possible, with a lot of external experts, that would give a complete, multidimensional image of the regional innovation ecosystem. For this reason, on the first day three panel discussions were organized to discuss the innovation ecosystem and how the different actors interact together to create the most efficient entrepreneurship and startup support initiatives. Moreover, a more specific discussion on deep technologies took place, welcoming also the first and only greek startup that is an official beneficiary of the EIC. Special mention was made for other European projects that aim to improve the conditions of the Greek ecosystem, regarding innovation and the accessibility of Greek startups to the EIC. The details of each guest is easily found in the agenda, above.



Figure 6. Impressions from Deep Tech Regional Innovation Valleys panel discussion



Figure 7. Study Visit to CERTH ITI Smart Home

It should not be omitted that due to the fact that this was the last PLE and physical meeting of the project, the Consortium also wanted to have some leisure time together for bonding. On the first day, after the long day, a boat cruise for the Consortium was arranged to spend time together, on a small cruise boat to watch the sunset from the Thermaikos Gulf. This activity was followed by dinner, to a traditional greek *taverna*, for the partners to taste local food. The next day, a coffee break during the day was organized at a newly built coffee shop, by the sea. The Consortium was able to spend some time in a less professional context, take pictures and enjoy the greek sun. Last, after the completion of the visits, the last lunch together was held at a fish-restaurant, again at a beach. Envolve, the host of this event, wanted to make the Peer Learning Experience remarkable and unforgettable not only from the professional perspective, but also in the framework of building a strong partnership that is complemented by strong, humane foundations.



3 Local Stakeholder Events

3.1 TUL

3.1.1 1st local Event at TUL (1st March 2024)

On Friday, 1st March 2024, Deans Jaromír Moravec and Aleš Kocourek and CxI Director Miroslav Černík welcomed guests from the European Institute of Innovation & Technology (EIT) Urban Mobility – Innovation Hub East at the Technical University of Liberec. Since May last year, TUL has been part of the European Innovation Network within the Skills2Scale project (written about it [here](#)).

The guests from EIT were mainly interested in projects related to sustainable transport, autonomous mobility, energetics, and renewable energy sources. During the meeting, dr. Traian Urban presented all the activities of the EIT Urban Mobility - Innovation Hub East. Dean Aleš Kocourek introduced the EIT representatives to the structure of TUL and the research focus of its divisions. Dr. Josef Břoušek presented research and development in autonomous mobility and Dr. Lukáš Hubka in the field of energetics and renewable energy sources. Later, the guests visited several research laboratories and attended demonstrations of prototypes of single- and two-track electric vehicles and autonomous vehicles. Many other topics were discussed throughout the visit, including the possibilities of coordinating activities for developing international cooperation of TUL in research, development, and innovation, as well as technology transfer and support for startups and spinoffs.

Innovation Hub East was established in January 2020 and covers the geographical area of the eastern part of Germany, the Czech Republic, Hungary, Poland, Slovakia, Romania, Bulgaria, Serbia and Israel. As of August 2020, the main office is located in the center of Prague, Czech Republic. Innovation Hub East works with partners from top universities, research centers, cities and municipalities, industrial corporations, and small and medium-sized enterprises. The partners are active in many projects covering the topics of functional mobility, micro-mobility, shared mobility, traffic monitoring through artificial intelligence, smart parking, building and monitoring innovative urban transport ecosystems, as well as projects related to the prevention of the spread of infectious diseases. Innovation Hub East is actively expanding its family of partners across Europe and facilitating the collaboration of international consortia and teams to build sustainable urban spaces that provide a qualitatively higher standard of living for citizens. Innovation Hub East is also active in organizing acceleration and scale-up programs.

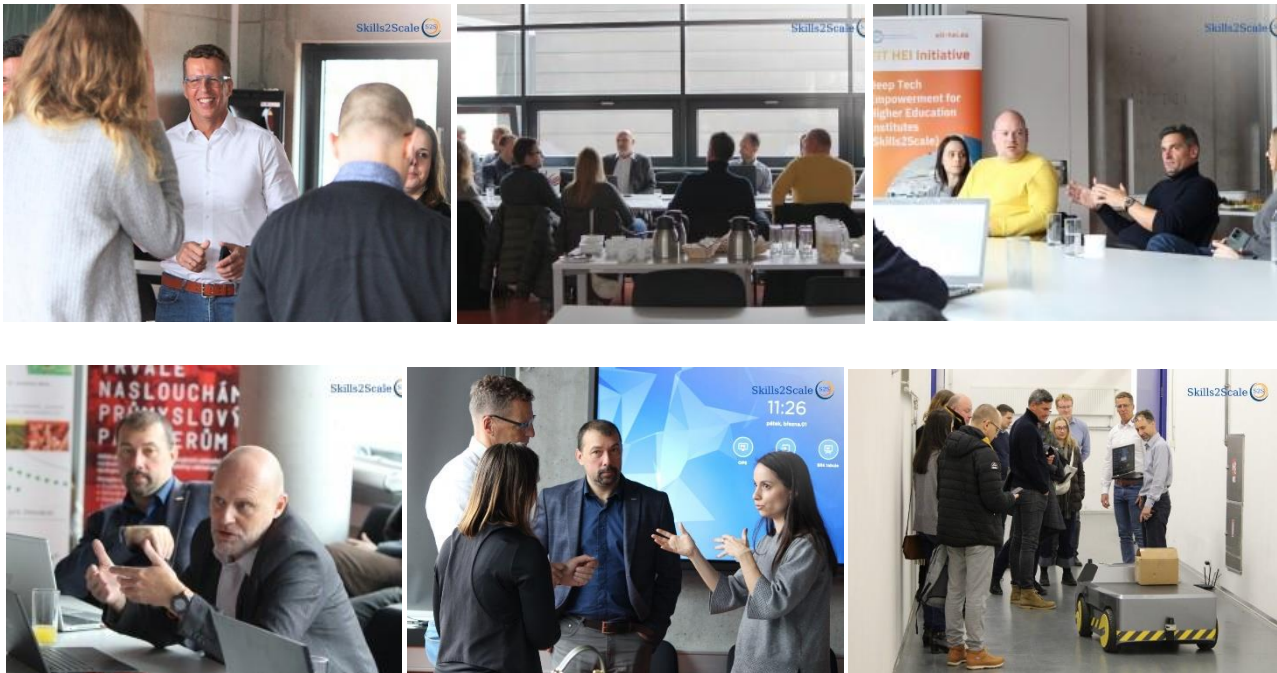


Figure 8. Impressions from TULs 1st local stakeholder event

3.1.2 2nd local Event at TUL (24th April 2024)

The second local event took place on 24th April at the regional incubator Lipolnk, which is owned and financed by the Liberec Regional Authority. More than 10 deep-tech companies are currently located in Lipolnk. 18 representatives of the regional incubator management, Hardwario, Flapper Drones, NullSpaces and TUL presented and discussed topics related to entrepreneurship education, business start-ups, funding opportunities and support from public and private institutions.

Lipolnk representatives presented the main support programmes for start-ups - Ambulance, Kick Off & Gym for Startups and Full Fat for Scaleups. The cooperation between Lipolnk and the Technical University of Liberec takes place within the framework of entrepreneurship education and the Student Business Club, especially the TUL Start-up Competition, in which the entrepreneurial mentors from Lipolnk participate. Some student start-ups are included in the incubation programme - currently, for example, the project of a student from the Faculty of Textile Engineering - EcoHaus, which deals with ecological laundry. Lipolnk, which is run by the Regional Development Agency, a company that is 100% owned by the Liberec Regional Authority, is a beacon for budding entrepreneurs in the Liberec Region.

The problem in the future may be the financing of the incubator, which is mostly provided from the public budget of the Liberec Regional Authority, and in this context the political risk was often mentioned. The incubated companies largely benefit from the Czech Republic's "Technological Incubation" grant programme, under which they can receive financial support for up to 5 years, including for the services provided by Lipolnk.



Figure 9. Impressions from TULs 2nd local stakeholder event

3.2 LU

3.2.1 1st Local Stakeholder Event at LU (11th April 2024)

To encourage and inspire students to become future entrepreneurs, University of Lapland and Lapland University of Applied Sciences collaborated on organizing entrepreneurship event. The event called “Bizarre Business Event” took place on the 11th of April 2024 at University of Lapland. The event featured multiple speeches and workshops covering different aspects of entrepreneurship such as characteristics of a successful entrepreneur, innovating, creating business ideas, productizing and pricing.

In order to attract a wider audience, the event agenda entailed parallel Finnish and English sessions. This proved to be successful, the number of participants in the event was 78, of whom 60 persons took part in the Finnish sessions and 18 persons joined the English program. The event not only reached students, but also academic and non-academic staff from both universities. There were external partners such as Business Rovaniemi from the City of Rovaniemi as well.

Skills2Scale project hosted the English track that started with a motivating speech by Anthony Okuogume “From idea to innovation and kick-starting the entrepreneurial journey”. Then followed by Skills2Scale and the Faculty of Art and Design, University of Lapland workshop “Wash and play your problems away” on creating futuristic business ideas. The workshop utilized service design method ideating washing machine and a card game for imagining preferred futures by Finnish Innovation Fund Sitra to ignite inspiration among students to start thinking about unusual business concepts (Alhonsuo, 2022 & Sitra, 2023). The students came up with ideas such as a new market for milk and learning experiences and data usage for elderly people in the far future. The event participants were pleased with speeches and the workshop.

The event organizing being a collaborative effort involving projects from University of Lapland and Lapland University of Applied Sciences: LeveLappi, RYHTI, GenGreen, HEI4S3-RM, Lapland Startup Incubator and Ecosystem, and the Faculty of Art and Design, networked Skills2Scale project with internal stakeholders at the two universities and initiated future co-operation.

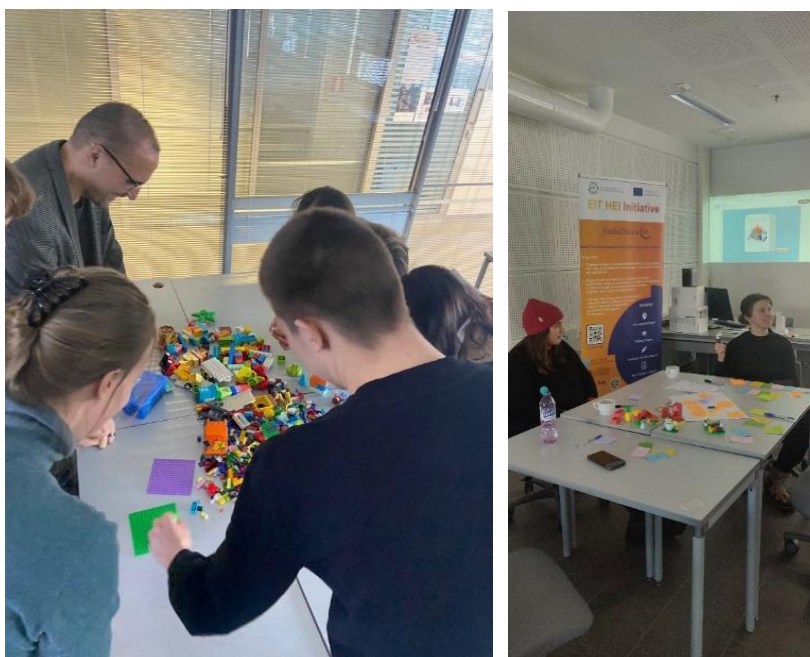


Figure 10. Impressions from 1st Local Stakeholder event at LU

3.2.2 2nd Local Stakeholder Event at LU (7th June 2024)

Business development was the topic of a stakeholder event called "Business Picnic" organised at the University of Lapland in Rovaniemi, Finland on the 7th of June, 2024. Growth opportunities for businesses, funding and services that are available for companies in Lapland were presented. In addition, there were discussions about building networks with professionals, entrepreneurs and higher education institutions.

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There is a lot of support for companies, but the information about different incentives, service providers, projects and co-operation possibilities are scattered and entrepreneurs have a hard time finding the correct information and connecting with the right people, when they are planning investments, expansions or ideating for new products and services. To address this issue, the event invited representatives of funder Centre for Economic Development, Transport and the Environment, local business developer Business Rovaniemi as part of the city of Rovaniemi, and higher education institutions University of Lapland and Lapland University of Applied Sciences to share information and answer questions about research, development and innovation possibilities for companies.

The event had 19 participants of which 10 were company representatives. The feedback received was good. The entrepreneurs did find the event useful. One entrepreneur said that he had in mind a collaboration idea with the universities that he would like to discuss further. Another business owner received information about an innovation voucher that he could utilise in business development in the future.

The event not only showed how Skills2Scale project works towards supporting entrepreneurship and innovations in Lapland, but also facilitated networking with higher education institutions and external stakeholders.

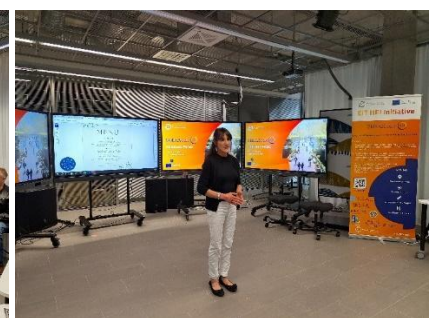
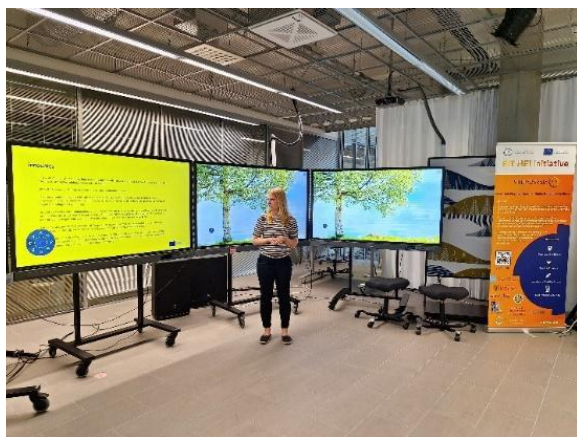


Figure 11. Impressions from 2nd Local Stakeholder Event at LU



Figure 12. Agenda

3.3 UNU

3.3.1 1st Local Stakeholder Event at UNU (29th February 2024)

The Startup Center of Uzhhorod National University initiated a webinar aimed at students, graduate students, and young researchers on the topic: «[How can one effectively showcase their startup during a pitch?](#)» on the 29th of February, 2024. Approximately 50 students and young scholars from five structural units, namely the dental, physical, and biological faculties, the faculty of information technologies, as well as the Scientific and Educational Institute of Chemistry and Ecology, participated in the webinar. The event was addressed by Kateryna Skubenychn, Head of the Department of Patent and Licensing Providing and Commercialization. During the webinar, participants were provided with insights on developing a successful startup project, assembling a startup team, understanding the role of a mentor and their contributions, as well as the importance of seeking mentorship support in a startup context. Additionally, attendees were guided on how to identify potential investors for implementing their startup projects.

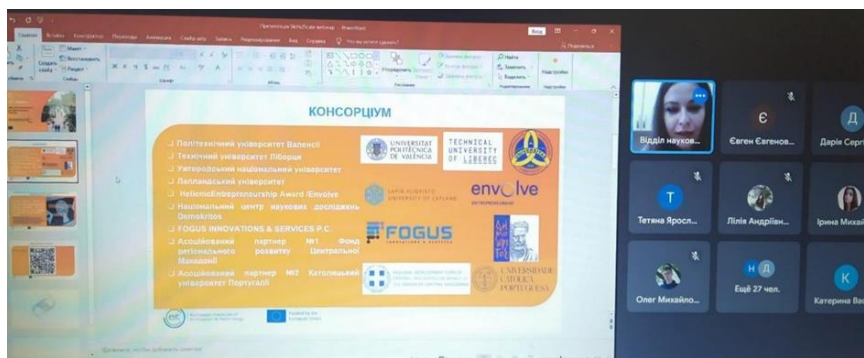
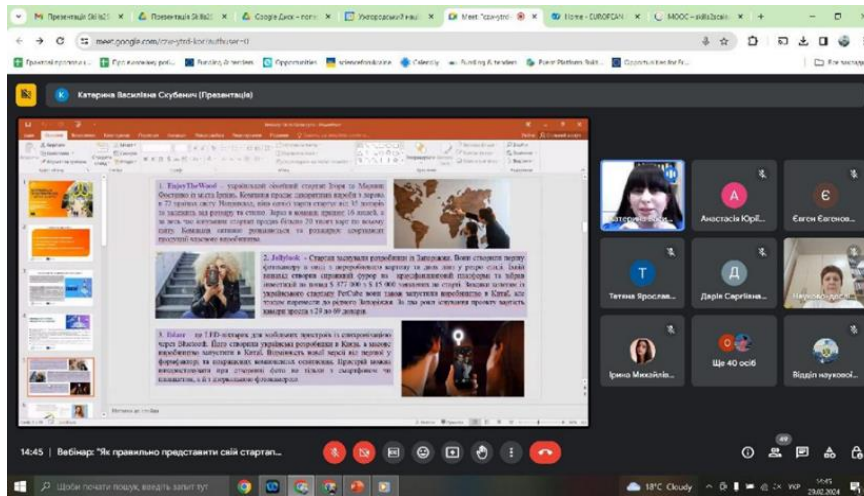


Figure 13. Impressions from 1st local stakeholder event at UNU

3.3.2 2nd Local Stakeholder Event at UNU (26th March 2024)

The webinar titled: "[Intersecting Horizons: Physics, Internet of Things \(IoT\), and 5G](#)" was conducted in a hybrid format, combining both online and offline participation on the 26th of March, 2024. The participants included academic and scientific staff, as well as students from the Faculty of Physics, totaling approximately 50 attendees. The speaker of the event was Alexander Homonnai, PhD in Physics and Mathematics, Associate Professor at the Department of Optics, Faculty of Physics, Uzhhorod National University. During the webinar, participants had the opportunity to gain insights into the capabilities of 5G technologies, including their features, advantages, and drawbacks, as well as a comparison with other contemporary data transmission systems, including Wi-Fi 7 and Starlink. Oleksandr Homonnai also briefed attendees on the Internet of Things (IoT) and the impact of 5G networks and satellite communication on its operations. The event speaker elucidated the disparity between cloud and fog computing, along with their relationship with the Internet of Things (IoT) and 5G.

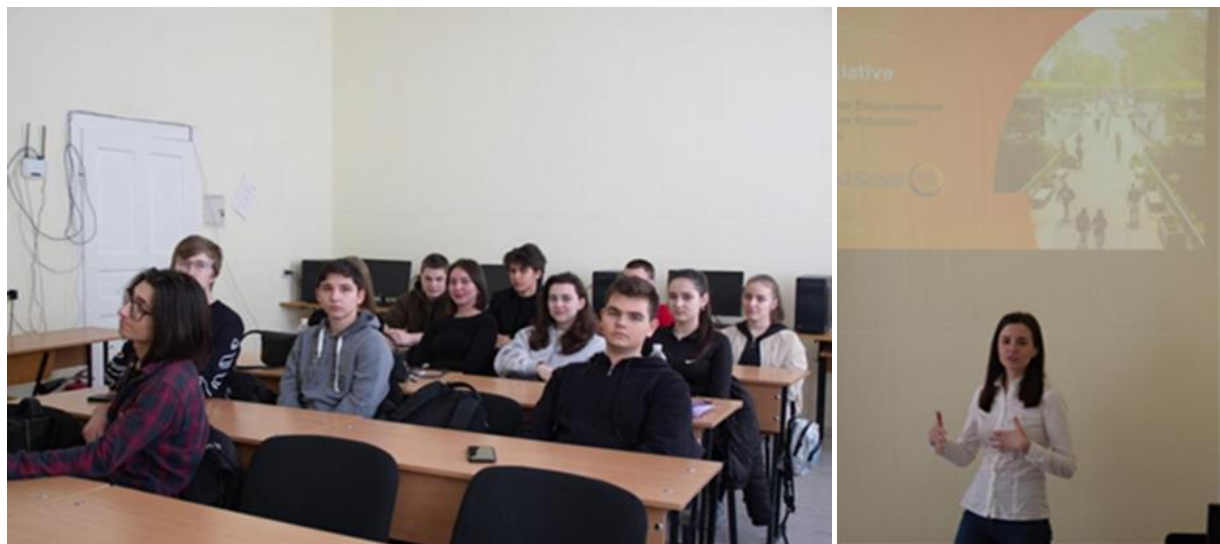


Figure 14. Impressions from UNU's 2nd local stakeholder event

3.3.3 3rd Local Stakeholder Event at UNU (27th March 2024)

The preliminary round of the competition "Start-up-UzhNU: Forward to innovations!" was organised on 27th of March 2024. The Council of Experts heard presentations from registered participants. The event was attended by 22 people. Then the participants presented their own projects. In total, 10 startup projects were presented.

Taras Griadil presented the start-up project "Uzhhorod Smart City Platform". Andriy Vohar, a student of the Faculty of Mathematics and Digital Technologies, presented the project "Information system of campus life at Uzhgorod University". Vladyslav Bulyk, representing the Faculty of Dentistry, presented the project "Implementing the Latest AI Technologies in Dental Practice". Andriana Chohey and Anna Maksymova, students of the Faculty of Health and Physical Education, presented the project "Wheelchair Transformer". Next to present their projects were representatives of the Faculty of Biology: Oleksandra Kolesnyk and Ivan Skliar. Oleksandra presented the project "Combined broad-spectrum antimicrobial agent", which is a combination of several components with antimicrobial



properties. Ivan Skliar presented a series of oral hygiene products for inflammatory periodontal diseases, developed taking into account the composition of the microbiota.

Vasyl Batryn and Anastasia Shkyrta, students of the Faculty of Information Technology, spoke about their innovative achievement, the "Device for Identifying the Position of Drones in Electronic Warfare". Mikhail Trombola, another representative of the Faculty of Information Technology, presented his project. The start-up project is a mobile application for employees of small retail stores. The application is designed to check the price of various products (mainly Apple), as well as to quickly present information to potential customers, with access management for employees. The next to present her project "PHOTeeth" - an approach to the use of the photogrammetric method in the post-implantation period and during prosthetic planning - was student of the Faculty of Dentistry, Maria Biley. The last speaker was Myroslav Goncharuk-Khomin. He presented the start-up project "Digital Dental Patient Study Concept - Mixed Reality Dental Education".



Figure 15. Impressions from UNU 3rd local stakeholder event



3.3.4 4th Local Stakeholder Event at UNU (2nd May 2024)

The final round of the competition «[Start-up-UzhNU: Forward to innovations!](#)» was held on the 2nd of May, 2024. The event was attended by 41 people. The competition is held to support students, postgraduates and young scientists under 35 and consists of teaching the basics of business management, implementing new research methods, gaining experience in publicity presenting one's idea and project to sponsoring entrepreneurs, financial support for the winners of the competition, assisting in the implementation of the idea (project) in production with the effective use of modern IT technologies, as well as the implementation of Beyond 5G networks and programs in various fields.

According to the results of the competition committee, the winners of the competition are:

- Two projects placed first. "Wheelchair Transformer", by the students of the Faculty of Health and Physical Education Andriana Chohey and Anna Maksymova. It is an innovative mechanism that allows adjusting the height with the help of special lifting springs. It allows the user to raise the seat of the chair and creates a comfortable and safe seat with the help of seat belts for people with disabilities. The other project was "Device for Identifying the Position of Drones in Electronic Warfare" by Vasyl Batryn and Anastasiia Shkyrta, students of the Faculty of Information Technology. The main goal of is to create an innovative solution that can determine the position of unmanned aerial vehicles with the highest possible accuracy in difficult electronic warfare conditions. Given the growing importance of drones in modern military operations, the ability to accurately determine their location in the event of a loss of GPS signal has become indispensable for the country's defence and security. The device is designed to operate in the low frequency range.
- The second place winner was the start-up project "Digital Dental Patient Study Concept - Mixed Reality Dental Education" presented by Myroslav Honcharuk-Khomin, Head of the Department of Therapeutic Dentistry. The project is an original learning platform, implementation methodology, implementation algorithm and a set of digital learning materials that can be implemented in the structure of formal and non-formal dental education on the basis of HEIs, public organizations, educational service providers, as well as on the initiative of students, applicants and candidates, and is characterized by the possibility of including the functions of augmented and mixed realities in the educational process with limited financial resources in the process of full-time or distance learning.
- Two projects placed third. One of them is a start-up project of students of the Faculty of Mathematics and Digital Technologies - Andrii Vohar, Oleksandr Hal, Viktor Pivkach and Ihor Dovhanych. They were the presenters of the project "Information system of campus life at Uzhgorod State University". The aim is to develop a website containing up-to-date information about the university campus. The website is also a platform for digitalization of all processes in the dormitory between students and commanders. Representatives of the Faculty of Dentistry Vladyslav Bulyk and Mariana Sushkova also placed third with the project "Implementation of the latest AI technologies in dental practice". The project is aimed at developing and implementing AI technologies in dental practice by combining hardware capacities to improve the method of choosing treatment tactics, introducing the tactics of parallel work of a doctor and auxiliary AI.



Figure 16. Impressions from UNU 4th local stakeholder event

3.4 UPV

3.4.1 1st Local Stakeholder Event at UPV (9th May 2024)

The event “Tech Transfer Revolution” was organized by Startup Valencia, co-organized by UPV as it integrates 4 out of its 6 committee members on the 9th of May, 2024. It gathered relevant actors from innovation and tech transfer areas from the universities, local government and the private sector.

In the round table of this event, panellists analyzed the current state of technology transfer activities and knowledge-based entrepreneurship from the various perspectives of the ecosystem's stakeholders, considering also Skills2Scale concerns from previous events. It was highlighted that our country stands as a leader in research and innovation. However, it was also agreed as imperative to align governmental policies and support mechanisms to effectively facilitate the transfer of research outcomes to the business sector. The consensus among participants emphasized



the necessity of fostering an entrepreneurial mindset within the research community. And also, that the research projects should be a focus on the practical application of knowledge and incentivizing entrepreneurship among academic staff.

The event benefited from the insights of several international experts who were invited to share their experiences and best practices. This inclusion of global perspectives aimed to enhance the local ecosystem with proven international strategies in technology transfer. The discussion underscored that technology transfer is not merely a driver of innovation and competitiveness but also a crucial contributor to job creation, sustainable economic growth, and the overall improvement of citizens' quality of life. Participants agreed that a robust strategy in this area is essential for economic development.

One of the primary objectives of this meeting was to disseminate the Government of Spain's comprehensive strategy on technology transfer. The government representative (from the Ministry of sciences, innovation and universities) highlighted the significant progress and successful initiatives in Valencia, showcasing it as a model region for science and technology transfer. The meeting stressed the importance of continuing to support and enhance these initiatives to maintain momentum and ensure ongoing improvements.

All in all, the event called for a coordinated effort to align research policies with business needs, promote entrepreneurial thinking within academia, and leverage international best practices to drive technology transfer. These steps are seen as vital to fostering innovation, economic growth, and societal well-being.



Figure 17. Impressions from 1st local stakeholder event at UPV



3.4.2 2nd Local Stakeholder Event at UPV (25th June 2024)

At the Polytechnic City of Innovation, UPV on the 25th of June, 2024 the UPV organized the Spin UPV event, which had the participation of the Vicerector for Innovation and technology transfer, I2T (Office for the Promotion of Research, Innovation and Technology) Transfer, IDEAS UPV, CPI UPV, ITEAM-UPV research institute and SATRD representatives from the communication department, as well as spin-offs participants from all the editions of SPIN UPV programme. The objective of this event was to share the experiences and learnings among businesses and spin-offs, and to reassure the commitment of the university in supporting them with existing mechanisms and new best practices. In total, 28 people participated, 7 women and 21 men.



Figure 18. Impressions from 2nd local stakeholder event at UPV



4 Conclusions

The organisation of capacity building events in phase 2 has been successful. Two peer learning events along with 10 local stakeholder events facilitated knowledge sharing and strengthened partnerships with HEIs and external partners to develop their ecosystems in Beyond 5G technologies, innovation and entrepreneurship activities.

The peer learning event in Liberec, Czech Republic, showcased the strong technical focus at TUL with faculties of the Institute for Nanomaterials, Advanced Technologies and Innovation. Not only does TUL conduct research on these topics, but also takes a more applied perspective on how the attained new knowledge and technologies can be used in practice in TUL. The nurturing of future talents and entrepreneurs is important at the university, which could be seen in the teaching, number of student business projects, connections with the private sector stakeholders and incubators, all supporting students and resulting in graduates starting their own companies. TUL is an excellent example of a higher education institution intertwined in the local innovation ecosystem.

The PLE in Thessaloniki organised by Envolve presented the strong local start-up scene with incubators such as Growth (I4G) starting as early as 2003. Although there are multiple business incubators they all work together completing each other in services. When it comes to the university supporting students in entrepreneurship the Aristotle University of Thessaloniki has newly established an Accelerator. Thessaloniki has a variety of technology and innovation related initiatives and high-end research and development projects, which might be the result of the local innovation ecosystem being linked with the regional and national ecosystems.

The peer learning events arranged in phase 2 continued to strengthen the cooperation between Skills2Scale project partners and future collaboration projects were discussed as part of the events. The initial plan to organise two local stakeholder events per HEI partners was exceeded since UNU arranged 4 local events. Each local stakeholder event also exceeded the set target of having at least 15 event participants. Lessons learned from events in phase 1 ensured the quality of content in local networking events at TUL, LU, UNU, and UPV.

TUL organised two local events to discuss cooperation opportunities with relevant regional and local stakeholders. The first event invited representatives from (EIT) Urban Mobility – Innovation Hub East, the second event local business incubator Lipo.ink. The main theme of the local events held at LU was to support entrepreneurship featuring also information about technology and innovations. The first event was targeted to students to inspire them in entrepreneurship and the second event for companies linking them with HEIs, funders, and local development initiatives. UNU's local events were a 5G themed webinar and 3 events related to start-up activities. UPV facilitated local events focusing on themes of technology transfer and entrepreneurship as well as spin-offs including key stakeholders to the topic's discussions. The local events attracted a high number of participants and initiated new partnerships with HEIs and external stakeholders and strengthened already existing partnerships.

A thriving ecosystem in Beyond 5G technology is based on strong local, regional and international partnerships and effective knowledge sharing, and these were successfully developed through capacity building events in phase 2.

