EIT HEI Initiative

Innovation Capacity Building for Higher Education

European Institute of Innovation & Technology

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D5.3 Scaling up and continuation strategy

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* R=Document, report; DEM=Demonstrator, pilot, prototype; DEC=website, patent fillings, videos, etc.; OTHER=other
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Executive Summary

This deliverable depicts the conditions related to the continuation and scale up of the activities of the project: funding opportunities, partners and Consortium plans, key stakeholders and potential risks. Particularly, it presents the (mostly competitive) funding opportunities at European level, highlighting those that are of greater interest for continuing the collaboration, either in training-oriented projects or in research ones. This deliverable is the last report related to WP5, and with it concludes the tasks related to this work package.

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

Higher Education Institutions (HEIs) are universities, colleges, and further education institutions offering and delivering higher education. They include public and private traditional universities and professional-oriented institutions, which are called universities of applied sciences or polytechnics. To keep relevancy and offer a modern and updated academic curricula, collaboration with external stakeholders (policy makers, research centres, businesses and business support organizations, etc.) and other HEIs is crucial.

While is region has specific conditions, in general, receiving funds for implementing collaboration models, for implementing new best practices, mentoring staff or researching is not an easy task. They depend on regional, national and European funds, in many cases based on competitive schemes. For instance, the present project has been funded by the 3rd Call of the EIT HEI Initiative, and thanks to it, 4 HEIs (UPV, LU, UNU and TUL) have successfully shared their best practices and generated some material that can be leveraged both by them and by other HEIs, supported by research-oriented and entrepreneurship support organization entities involved in the project (Envolve, NCSRD and Fogus).

These kinds of collaborations require funds for travelling, organizing events and hire dedicated staff for support the day-to-day operations of the projects. One of the advantages of the European Union is its strong funding ecosystem, which although competitive and in many cases hard to get proposals funded, offers a wide range of opportunities depending on the type of entity and the kind of projects they aim to execute.

This deliverable is distributed in 3 main sections (plus this introduction and the Conclusion section), each of them focusing on specific aspects related to the continuation and the scale up of the activities. Section 2 delves into the European funding ecosystem, presenting several mechanisms that partners can consider to continue collaboration. Section 3 presents a high-level overview of the individual plan of the involved partners to continue the activities of the project, including those funding opportunities more related for a potential continuation in similar or different collaboration models. Also, key stakeholders are highlighted. Finally, Section 4 depicts a table of risks and mitigation actions regarding the success of the scale up and the continuation strategy.

2 Funding sources and opportunities

Horizon Europe is EU's key funding programme for research and innovation. Several funding opportunities can be found, dividing in 3 pillars as it can be seen in Figure 1:

- **Pillar I – Excellent science:** It reinforces the EU's scientific leadership, promoting the development of high-quality knowledge and skills. It supports frontier research projects through the European Research Council and boosts investment in research infrastructures. The Marie Skłodowska-Curie actions fund researchers' mobility, training and career development activities.
- **Pillar II – Global challenges and competitiveness:** The second pillar supports research and innovation that addresses societal challenges and industrial technologies in areas such as health, digital, climate, energy, mobility, civil security, food and natural resources. It introduces research and innovation missions, such as on climate-neutral and smart cities, as well as European partnerships, for example on clean hydrogen. This pillar also includes activities pursued by the Joint Research Centre (JRC).
- **Pillar III – Innovative Europe:** It focuses on promoting all forms of innovation, and in particular breakthrough and disruptive innovation, through the European Innovation Council (EIC). The EIC offers a one-stop-shop for innovators with high potential to create markets for the future. In parallel, the EIT helps businesses, educational and research bodies work together to create an environment conducive for innovation and entrepreneurship in Europe.
- **WIDERA:** Transversal to the other pillars, it comprises several mechanisms with the goal to widening participation and spreading excellence actions under Horizon Europe. It involves different areas of intervention, including the modernization of widening countries, strengthen networking, pathways to synergies, facilities to support dissemination and exploitation, excellence hubs, etc.

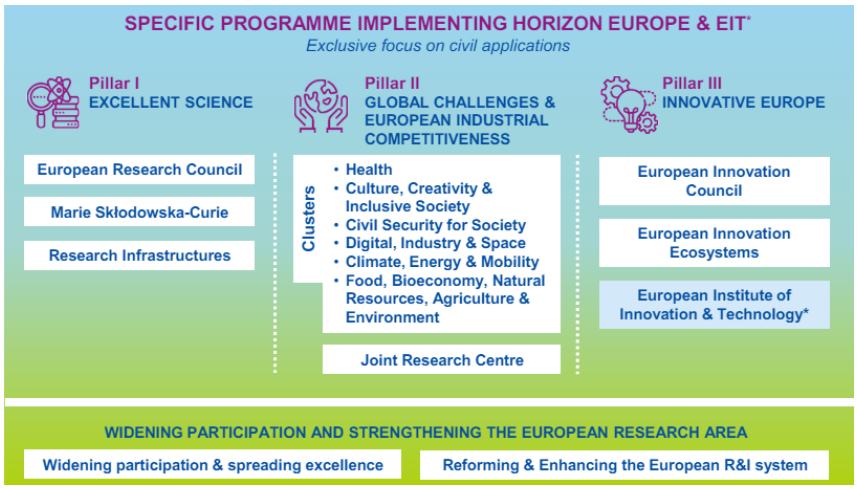


Figure 1. Horizon Europe specific programme & EIT

Among the different funding schemes, some of them have higher interest for the project members than others, especially in terms of continuing the collaboration. These are highlighted in the following subsections.

2.1 Global science: MSCA (Pillar I)

The first pillar includes three different types of mechanisms. Among them, the *ERC* are discarded primarily as most of its funding schemes are oriented towards a single researcher (starting, consolidation and advanced grants), or maximum two (synergy grants). The *research infrastructure* is focused on facilities and related processes and services, thus far from the scope of Skills2Scale. On the contrary, *Marie Skłodowska-Curie Actions (**MSCA**)* are the EU's flagship funding programme for doctoral education and postdoctoral training of researchers. They are suited for continuing a **similar kind collaboration** (but with **higher a scientific weight**), especially on 2 out of its 5 types of actions: Doctoral Networks (DN) and Staff Exchanges (SE), in which **pre-doctoral students and staff are trained**, respectively.

2.1.1 Doctoral Networks (former ITNs)

Doctoral Networks implement doctoral programmes, by partnerships of universities, research institutions and infrastructures, businesses including SMEs, and other socio-economic actors from different countries across Europe and beyond. These doctoral programmes will respond to well-identified needs in various research and innovation areas, expose the researchers to the academic and non-academic sectors, and offer research training, as well as transferable skills and competences relevant for innovation and long-term employability [1].

This funding programme is one of the main mechanisms for continuing the work of the Consortium. In these projects, the training of the applicant PhD candidates in different areas is key. To that end, a comprehensive plan between the participants should be devised, in which each entity would bring a distinct value for the students, which would collaborate in the framework of a common research direction. Currently, there are **two calls for proposals** in the following 12 months, in which, according to previous calls, around **15 projects** are expected to be funded.

2.1.2 Staff exchanges

This kind of action funds short-term international and inter-sectoral exchanges of staff members involved in research and innovation activities of participating organisations. The aim is to develop sustainable collaborative projects between different organisations from the academic and non-academic sectors (in particular SMEs), based in Europe and beyond. Exchanged staff benefit from new knowledge, skills and career development perspectives, while participating organisations increase their research and innovation capacities [2].

This type of funding has special interest for continuing the collaboration, as it focuses on interdisciplinary, international and inter-sectoral projects, with the goals of implementing and R&D programme while upskilling the staff members. Still, it funds only the secondments and not the in-house R&D activities related to a given project. In the last call, 73 out of 233 proposals were granted, and slightly higher numbers is expected for the next calls (**two calls** in the following year).

2.2 Global challenges: cluster projects (Pillar II)

The second pillar is divided into *6 thematic clusters*, which do not target training or mentoring, but rather specialized research and innovation in specific areas. Thus, in case of applying to these topics, **the nature of the collaboration would be shifted**, from knowledge exchange among HEIs with support of the involved SMEs and research centres towards novel research and innovation goals – in which specific departments or research groups would participate.

This second pillar is established through 6 clusters of research and innovation activities, in order to maximise integration and synergies across the respective thematic areas while securing high and sustainable levels of impact for the Union in relation to the resources that are expended. It encourages cross-disciplinary, cross-sectoral, cross-policy and cross-border collaboration in pursuit of the Sustainable Development Goals (SDGs) by following the principles of the 2030 Agenda for Sustainable Development [3]. Almost 58.5% of the overall Horizon Europe funding is devoted to this kind of actions (€53.5 billion). The funding calls of these clusters are divided into specific topics, focused on a specific challenge or interest for the European Commission. Having known each other during the execution of Skills2Scale, the specific area of expertise of the involved teams could fit with the needs of others, to build or be part of a competitive proposal.

2.2.1 Health (Cluster 1)

The aims of this cluster include improving and protecting the health and well-being of citizens of all ages by generating new knowledge, developing innovative solutions and integrating where relevant a gender perspective to prevent, diagnose, monitor, treat and cure diseases. Further aims include developing health technologies, mitigating health risks, protecting populations and promoting good health and well-being in general and at work. Finally, this cluster also aims to make public health systems more cost-effective, equitable and sustainable, prevent and tackle poverty-related diseases and support and enable patients' participation and self-management [4].

Within the next months, **6 calls for proposals** (10 different topics) are already opened for submissions, in which **~36 projects** are expected to be funded (**>300 M€** of budget), focused mostly on tackling cancer (specifically), diseases and reducing their burden, and ensuring access to innovative, sustainable and high-quality health care (the so-called destinations #3 and #4 of the expected impacts of the cluster).

Among the HEIs participating in Skills2Scale, UNU (mostly) and TUL have showcased their high standards in research with respect to areas of this field. That does not mean that the other Consortium members cannot participate, on the contrary, projects should be interdisciplinary in most cases to have the opportunity to be funded. For instance, UPV & NCSRD could contribute in digitalization and data processing/management supporting the proposition, whereas LU

could bring their expertise in social sciences (e.g., social acceptance, sustainability studies). On the other hand, Envolve and Fogus could bring their expertise in communication, dissemination, training and innovation, especially in Innovation Actions (IAs). It is also worth mentioning that here it is considered the expertise of the teams that have been involved in Skills2Scale, but other teams from the participants could also have an interest (e.g., SABIEN group in UPV).

2.2.2 Culture, Creativity and Inclusive society (Cluster 2)

The second cluster aims to strengthen European democratic values, including rule of law and fundamental rights, safeguarding our cultural heritage, and promoting socio-economic transformations that contribute to inclusion and growth [5]. Cluster 2 mobilises multidisciplinary expertise of European social sciences and humanities (SSH) for understanding fundamental contemporary transformations of society, economy, politics and culture. It aims to provide evidence-based policy options for a socially just and inclusive European green and digital transition and recovery [6].

Within the next months, Heritage-related calls are opened (democracy and transformation-related calls have closed recently), with **1 call for proposal** (5 topics) in which **~10 projects** are expected to be funded (**48 M€**).

Because of its expertise, LU is the member that fits most the "social" aspects of this cluster. Still, digitalization and innovation is always required in this types of projects, including good sustainability plans, therefore the rest of the project partners could contribute in either more technical or impact-related aspects).

2.2.3 Civil security for society (Cluster 3)

Civil Security for Society responds to the challenges arising from persistent security threats, including cybercrime, as well as natural and man-made disasters. To reach this goal, the European Commission funds research and innovation projects on crisis management, fight against crime and terrorism, external and border security, cybersecurity, privacy and trust [7]. Additionally, the cluster acknowledges the lessons learnt from the COVID-19 pandemic to strengthen prevention, mitigation, preparedness and capacity building for crises (including health crises) and to improve cross-sectoral aspects of such crises [8].

These aspects are now of great interest, reflected in the work programme with **6 calls for proposals** (25 topics) opened for the upcoming months, in several aspects: Border management, disaster resiliency, resilient infrastructure, increased cybersecurity, fighting crime and terrorism and support to security research. Overall, **~44 projects** are expected to be granted, with almost **200 M€** of budget.

While the Consortium has not explored the involved topics, the UPV (in particular, the SATRD group, which is involved in Skills2Scale) has a good track record of projects of this cluster, with one new action from a previous call about to be started. In any case, social aspects are always needed in this kind of actions (thus giving room for LU participation mostly, but also to departments from the other involved HEIs); as well as complementary technical and innovation aspects (rest of project members).

2.2.4 Digital, Industry & Space projects (Cluster 4)

The overarching vision behind the proposed investments under Cluster 4 is that of Europe shaping competitive and trusted technologies for a European industry with global leadership in key areas, enabling production and consumption to respect the boundaries of our planet, and maximising the benefits for all parts of society in the variety of social, economic and territorial contexts in Europe. This will build a competitive, digital, low-carbon and circular industry, ensure sustainable supply of raw materials, develop advanced materials and provide the basis for advances and innovation in global challenges to society [9].

In the upcoming months, **3 calls for proposals** (9 topics) are opened, focused on two main aspects: A human-centred and ethical development of digital and industrial technologies (mostly focused on AI and digital transformation), and Digital and emerging technologies for competitiveness and fit for the Green Deal (Data, Twin Transition, Resilience and Space not expected for the upcoming months). Overall, **~13 projects** are expected to be funded (**125 M€**).

As with the other clusters, calls are specific, therefore taking part in a proposal depends first and foremost on the area of expertise (among other factors). For instance, UPV and TUL, ICT universities, are mostly interested in this cluster, but at least for UPV the ongoing calls do not fully match the expertise of the group involved in Skills2Scale - In any case, it is likely that some of the calls for the next year match their expertise. Other technical partners, such as NCSRD & Fogus, have also interest on these calls, where Innovation and social and humanitarian sciences (sometimes), are demanded.

2.2.5 Climate, Energy & Mobility projects (Cluster 5)

This cluster aims to fight climate change by better understanding its causes, evolution, risks, impacts and opportunities, and by making the energy and transport sectors more climate and environment-friendly, more efficient and competitive, smarter, safer and more resilient [10]. The overarching driver for this cluster is to accelerate the twin green and digital transitions and associated transformation of our economy, industry and society with a view to achieving climate neutrality in Europe by 2050. This encompasses the transition to greenhouse gas neutrality of the energy and mobility sectors by 2050 at the latest (as well as that of other sectors not covered by this cluster), while boosting their competitiveness, resilience, and utility for citizens and society.

In the following year, **4 calls for proposals** (34 topics) are ongoing or will be opened, particularly in the following topics: Sustainable, secure and competitive energy supply, Cross-sectoral solutions for the climate transition, Efficient, sustainable and inclusive energy use, and Safe, Resilient Transport and Smart Mobility services for passengers and goods. In total, **~67 projects** are expected to be funded (almost **350 M€**).

While any of the groups of the partners involved has these energy-related calls as primary target, still, they (or other departments/research groups of their entities) could bring their expertise in these topics, either as technological supporters, socioeconomic knowledge or innovators.

2.2.6 Food, Bioeconomy, Natural Resources, Agriculture and Environment (Cluster 6)

Cluster 6 aims at reducing environmental degradation, halting and reversing the decline of biodiversity on land, inland waters and sea and better managing natural resources through transformative changes of the economy and society in both urban and rural areas. It aims at ensuring food and nutrition security for all within planetary boundaries through knowledge, innovation and digitalisation in agriculture, fisheries, aquaculture and food systems and steer and accelerate the transition to a low carbon, resource efficient circular economy and sustainable bioeconomy, including forestry [11].

3 calls for proposals (5 topics) are opened for submission for this year, related to Land, ocean and water for climate action, Fair, healthy and environmentally-friendly food systems from primary production to consumption, and Innovative governance, environmental observations and digital solutions in support of the Green Deal. A total of ~7 projects are expected to be funded (around ~65 M€). Regarding Skills2Scale partners, same analysis as is Cluster 5 apply.

2.2.7 Funding from partnerships

Considering the different clusters, Skills2Scale members, in terms of research, would tend towards clusters 1 (TUL, UNU), 2 (LU, UPV) and 4 (UPV, TUL, NCSRD) – considering only those departments more involved with the action, with Fogus and Envolve cross-cutting to all of them. It is important to highlight that **some of the calls** of the aforementioned clusters are **prepared jointly with partnerships**.

European Partnerships bring the European Commission and private and/or public partners together to address some of Europe's most pressing challenges through concerted research and innovation initiatives. They are a key implementation tool of Horizon Europe, and contribute significantly to achieving the EU's political priorities [12]. These partnerships (38 in total, without considering those belonging to Pillar 3) are clustered in the same way as the clusters above. In fact, the "**co-programmed**" ones include their calls (e.g., ADRA in Cluster 4, ZEWT in cluster 5) within their clusters' work programmes. On the other hand, "**institutionalized**" and "**co-funded**" have their own – and thus calls are managed independently (can also be found in the EC's *Funding & Tenders Portal* as cluster calls). The list can be seen in the following figure on the right.

PILLAR II - Global challenges & European industrial competitiveness

Cluster 1: Health	Cluster 4: Digital, industry and space	Cluster 5: Climate, energy and mobility	Cluster 6: Food, bioeconomy, natural resources, agriculture and environment
Innovative Health Initiative	Key Digital Technologies	Clean Hydrogen	Circular Bio-based Europe
Global Health EDCTP3	Smart Networks and Services	Clean Aviation	Biodiversa+
Transformation of Health Care Systems	High Performance Computing	Single European Sky ATM Research 3	Blue Economy
Risk Assessment of Chemicals	European Metrology (Art. 185)	Europe's Rail	Water4All
ERA for Health	AI-Data-Robotics	Connected, Cooperative and Automated Mobility	Animal Health and Welfare
Rare Diseases	Photonics	Batteries	Accelerating Farming Systems Transitions
One-Health Antimicrobial Resistance	Made in Europe	Zero-emission Waterborne Transport	Agriculture of data
Personalised Medicine	Clean Steel – Low-Carbon Steelmaking	Zero-emission Road Transport	Safe and Sustainable Food Systems
Pandemic Preparedness	Processes4Planet	Built4People	
	Globally Competitive Space Systems	Clean Energy Transition	
		Driving Urban Transitions	

- Institutionalised partnerships (Art 185/7, EIT KICs)
- Co-programmed
- Co-funded
- Not covered in the BMR 2022 due to a later start date

For Skills2Scale members, the Smart Networks and Services (SNS) Joint Undertaking is the most interest one in terms of funding opportunities, as it is directly related to Beyond 5G research and innovation actions. Currently, **any call for proposals** is opened as the second phase of projects has recently started, but new calls are expected to be launched by 2025. NCSRD, Fogus and UPV are the members with more experience in those calls, but still, other members could bring either their expertise, use cases or innovation knowledge on them.

2.3 Innovative Europe (Pillar III)

Europe has a solid research and industrial base and is the home of bold, creative entrepreneurs. Yet it often needs to strengthen the use of its scientific excellence and industrial prowess to accelerate innovation and turn innovative SMEs into global technology giants. By reinforcing close cross-border collaboration between multiple actors, including academia, the public sector, industry and individual entrepreneurs, Horizon Europe aims to develop radical solutions to pressing societal challenges and fostering sustainable economic growth and employment. Through its Pillar III, the programme focuses on supporting the development of disruptive and market-creating innovations and on enhancing European innovation ecosystems [13].

There are three instruments that are part of this pillar: The *European Innovation Council (EIC)*, which supports start-ups, SMEs and research teams developing high-risk, high-impact breakthrough innovation and game-changing solutions – contributing to European Green Deal and Recovery Plan; the *European Innovation Ecosystems*, which focus on building an interconnected innovation ecosystem, considering European, national and regional initiatives while reinforcing their innovation capacity; and the *European Institute of Innovation and Technology (EIT)*, which strengthens EU innovation ability by nurturing entrepreneurial talent – also linking with all the actors, including academia.

Among them, the two latter are o higher interest for the Skills2Scale members. EIC is not further elaborated as its mechanisms target particular entities/figures rather than Consortia, towards research path to market, from funding pathing towards initial commercialization (for researchers and innovators) and acceleration (for start-ups, SMEs and mid-caps), and it does not align with Skills2Scale sustainability.

2.3.1 European Innovation Ecosystems

This instrument complements and synergizes with EIC, EIT and innovative activities across Horizon Europe and other EU funding programmes. The main objective is to create more connected and efficient innovation ecosystems to support the scaling up of companies, encourage innovation and stimulate cooperation among national, regional and local innovation actors. Its main areas of intervention are the following [14]:

- To builds interconnected, inclusive innovation ecosystems across Europe by drawing on the existing strengths of national, regional and local ecosystems and pulling in new, less well-represented actors and territories to set, undertake, and achieve collective ambitions towards challenges for the benefit of society, including the green, digital, and social transitions.
- To reinforce network connectivity within and between innovation ecosystems to accelerate sustainable business growth with high societal value.
- To support the European Partnership for Innovative SMEs.
- To complement the European Regional Development Fund support for innovation ecosystems and interregional partnerships around smart specialisation topics.

At this moment, there is a **single active call** (2 topics), as the plan for the next year has not been released yet. A total of ~15 projects are expected to be funded (3.5 M€). One of the topics is **quite linked with Skills2Scale aspects**, as they

expect contributions to some of the following aspects (i) improvement integration of innovation ecosystems of research institutions and similar organizations with start-ups and start-up networks, accelerators and incubators, business angels and investor communities; (ii) improved flows of knowledge, skills, and talents between educational institutions and other innovation ecosystem actors; (iii) Improved skills of all involved ecosystem actors to increase innovation potential, inter-sectoral mobility, and market uptake of new technologies; (iv) improved competence of students, graduates, researchers, and workforce to launch, run, and lead successful and profitable start-ups, including in the deep tech field; and (v) increased engagement and connectedness with other ecosystem actors, among others. Besides, the second topic is less related but still of relevance, as it aims at influencing policy makers from perspectives as those of the Consortium members.

2.3.2 European Institute of Innovation & Technology (EIT)

The EIT, which is the innovation network funding Skills2Scale project (via HEI initiative), is an integral part of Horizon Europe. It brings together **public and private organisations across business, education, and research**. It follows a model based on partnerships across industries, with the goal to find and commercialise solutions to pressing global challenges. For each global challenge, there is an ecosystem of partnerships called Knowledge and Innovation Communities (KIC) – similar to those from the second pillar. To face these global challenges, the EIT community of partners offers a wide range of education courses, business creation and acceleration services, and innovation-driven research projects [15].

The different KICs (EIT Climate-KIC, EIT Culture & Creativity, EIT Digital, EIT Food, EIT Health, EIT InnoEnergy, EIT Manufacturing, EIT Raw Materials and EIT Urban Mobility) periodically launch calls or have permanent ones, with their specific objectives and targets. These are also announced in the Funding and Tenders Portal from the EC, but still the submission system is self-managed (currently, 44 M€ are allocated for active calls for proposals). Specific calls might be of interest depending on the area of expertise of the entity/department, with objectives of **developing innovative products & services, starting new companies, and training a new generation of entrepreneurs**.

Besides, the *EIT community initiatives* might have even more interesting funding opportunities to continue the collaboration, as they are cross-cutting programmes in which (some or all) KICs come together to develop strategic services, fostering synergies and delivering cost-effective solutions through economies of scale. Among the 11 programmes, those more relevant for Skills2Scale are:

- EIT Community, and among them, the **Deep Tech Talent Initiative (DTTI)** and EIT Alumni are of interest for the project (especially, the funding opportunities from the former). Training proposals can be of great interest, with the last call recently closed in which **20 projects are to funded, distributing 2 M€**. More opportunities will be expected in the future.
- **EIT HEI Initiative**, the community that Skills2Scale belongs to. A fourth call for funding is expected after August 2024, being the most aligned funding opportunity with Skills2Scale activities.

2.4 WIDERA: COST actions

Widening Participation and Spreading Excellence actions under Horizon Europe, contribute to building research and innovation capacity for countries lagging behind. They will strengthen their potential for successful participation in transnational research and innovation processes, promote networking and access to excellence. Participants in the programme will be able to upgrade their research and innovation systems, making them stronger and allowing the EU as a whole to advance together, in line with the policy objectives of the European Research Area [16]. Several activities, actions and initiatives fall under this cross-pillar of Horizon Europe:

Widening Participation and Spreading Excellence

- Teaming, Twinning, ERA Chairs,
- European Cooperation in Science and Technology (COST)
- Boosting National Contact Points' (NCPs) activities, pre-proposal checks and advice
- Brain circulation
- Excellence initiatives
- Possibility for entities from widening countries to join already selected collaborative R&I actions
- Recognition of participation
- Matchmaking services

Reforming and enhancing the EU R&I system

- Strengthening the evidence base for R&I policy
- Foresight
- Support for policy makers to the ERA development
- Support to national R&I policy reform, including Policy Support Facility
- Attractive researcher careers and links with higher education
- Open science, citizen science and science communication
- Gender equality
- Ethics and integrity
- Support to international cooperation
- Scientific input to other policies
- Support to the Programme implementation
- Support for National Contact Points
- Support to dissemination & exploitation

Among them, one mechanism raises the attention of the Consortium members, which are the European Cooperation in Science and Technology (**COST**) **actions**. A COST action is an interdisciplinary research network that brings researchers and innovators together to investigate a topic of their choice for 4 years. COST Actions are typically made up of researchers from academia, SMEs, public institutions and other relevant organisations or interested parties. Open to all science and technology fields, including new and emerging fields; COST Actions offer an inclusive, pan-European environment for individuals of all levels of seniority to grow their professional research networks and boost their careers.

While COST allow partners to join ongoing initiatives of their interest, it also offers the possibility of submitting their own proposal. During its 4 years, the action would receive up to 575.000 € to execute its activities, which **covers** the **expenses of networking activities rather than research**. It is used to organise and fund events, Short-term Scientific Missions, Training Schools, communication activities, and virtual networking tools. Next Open call for proposals will be open in October. Currently, 60 proposals are ongoing, so an estimation of having ~15 actions granted per year can be made.

2.5 ERASMUS+

Erasmus+ is the EU's programme to support education, training, youth and sport in Europe. With a budget if €26.2 billion, the 2021-2027 programme places a strong focus on social inclusion, the green and digital transitions, and promoting young people's participation in democratic life. It supports priorities and activities set out in the European Education Area, Digital Education Action Plan and the European Skills Agenda. The programme's objective is pursued through three "Key Actions" [17]:

- Key Action 1: Learning mobility of individuals.
- Key Action 2: Cooperation among organisations and institutions (the most interesting for the Consortium).
- Key Action 3: Support to policy development and cooperation.

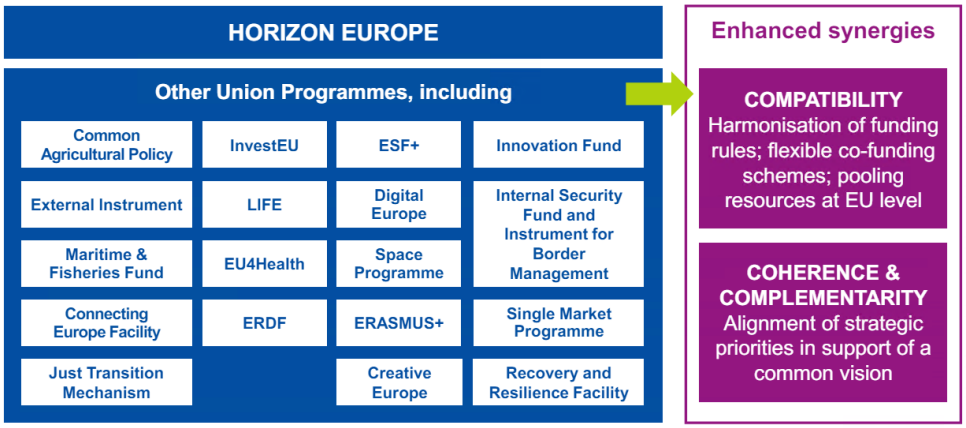
Organizations have different opportunities [18], including *partnerships* and *alliances*, apart from others less relevant for Skills2Scale members:

- **Partnerships** have the goal to (i) increase the quality in the work, activities and practices of organisations and institutions involved, opening up to new actors, not naturally included within one sector; (ii) build capacity of organisations to work transnationally and across sectors; (iii) address common needs and priorities in the fields of education, training, youth and sport; and (iv) enable transformation and change (at individual, organisational or sectoral level), leading to improvements and new approaches, in proportion to the context of each organisation. There are different types of funding opportunities (including some specifically devoted to Vocational Excellence), and depending on the modality projects vary between 0.5 and 4 M€ (**~36 projects in the previous round of funded projects**, involving a minimum of 2 or 8 organizations depending on the type, **70 M€** distributed in 3 calls). Currently, **calls are not opened** but are expected for early 2025.
- **Alliances** aim to strengthen Europe's innovation capacity by boosting innovation through cooperation and flow of knowledge among higher education, vocational education and training (both initial and continuous), and the broader socio-economic environment, including research. They also aim to boost the provision of new skills and address skills mismatches by designing and creating new curricula for HEIs and vocational education and training (VET), supporting the development of a sense of initiative and entrepreneurial mind-sets in the EU. While currently **no calls are opened** (as they were recently closed), as reference, the previous round of funded projects distributed 124 M€, for projects between 2M€ (targeting alliances for education and enterprises, 32 funded projects with minimum of 8 partners) and ~12.5 M€ (targeting alliances for Sectoral Cooperation on Skills, 5 funded projects, with a minimum of 12 partners).

2.6 Other initiatives

So far, **Horizon Europe** and **ERASMUS+** programmes have been reviewed. It should be highlighted that, while Horizon Europe is the main funding programme, the European funding ecosystem is large and partners may find additional mechanisms for continuing the cooperation, either in a similar nature as Skills2Scale or in a more research-oriented

collaboration. Other programmes are: European Defence Fund (EDF), EU External Action (RELEX), Programme for the Environment and Climate Action (LIFE), Single Market Programme (SMP), Digital Europe Programme (DEP), Euratom Research and Training Programme (EURATOM), EU4Health Programme (EU4H), Creative Europe Programme (CREA), Connecting Europe Facility (CEF), Citizens, Equality, Rights and Values Programme (CERV), Research Fund for Coal & Steel (RFCS), Interregional Innovation Investments Instrument (I3), EU bodies and Agencies (EUBA), Internal Security Fund (ISF), Just Transition Mechanism (JTM), Asylum, Migration and Integration Fund (AMIF), Programme for the Protection of Euro against Counterfeiting (PERICLES IV), Social Prerogative and Specific Competences Lines (SOCPL), and European Social Fund + (ECF). The EC aims at them to complementary towards its objectives, building synergies while minimizing redundancies. Many of them also focus on training and upskilling, in specific areas, however in general they are less reliable as collaboration mechanisms after Skills2Scale conclusion.



Other key cooperation tools can be the projects on European Territorial Cooperation (ETC) [19]. Different mechanisms are available, being the **Interreg cooperation** (ETC strand 3) an interesting one as it aims at building networks to develop good practice and facilitate the exchange and transfer of the experience of successful regions. It is a tool to strengthen cohesion and overcome present and future challenges. Other strands (depending on the vicinity of the involved members) can be of interest, e.g., cross-border, transnational and outermost.

3 Follow-up activities per partner

3.1 UPV

The UPV is a university with high success in the aforementioned mechanisms, especially in Horizon Europe clusters' calls as one can see in this list, but also different MSCA, EIC, ERC and WIDERA actions can be seen. Also, the UPV is quite active in Erasmus+, currently with more than 500 agreements for secondments between 2 and 12 months (also in other grants, such as PROMOE and SICUE) for sending and receiving studies. Only last year (2023), more than 120 M€ were gathered from European funds.

With respect to the continuation of the UPV for **long-term sustainability actions**, the main focus is in the following aspects:

- Enhancing the **MOOC** during the next years, inviting Consortium members and external experts of the Innovation and B5G fields. Making it eligible for credits, to make it more appealing for students. Promoting it in events where credits are also offered.
- Integrating the **interdisciplinary best practice (5GIIL)** proposed by TUL in the UPV curricula. Due to internal organization aspects, less flexible than other universities, this will require some time to be arranged with the aim to have a similar success.
- Consider some of the technical material proposed in the **training programme** as lessons of the official subjects, either in the telecommunication school and/or its related master degrees.
- Participate in **innovation-related events** organized by the partner Envolve, mainly through the UPV's entrepreneurship area (IDEAS).
- In Skills2Scale, UPV has had the role of Coordination (supported by Envolve) and have brought expertise in the technical arena key (along with NCSRD and Fogus). If the Consortium (or some of its members) applies for **similar mechanisms** (EIT HEI calls primarily), the UPV would be interested to participate, but as a "regular" partner and considering another technical area in which the university is the **recipient of knowledge transfer**. An ERASMUS+ project jointly with Envolve has been recently granted, focused on boosting innovation through cooperation and flow of knowledge among higher education and the broader socio-economic environment.
- In terms of research, continue the **collaboration in the 5G & beyond research field (via SNS calls)** with Fogus & NCSRD. This is already achieved, as UPV has an ongoing SNS project that started this year (2024), SAFE-6G, and a Marie Curie Staff Exchange action with Fogus, AIAS.
- Exploring other **interdisciplinary research and innovation** opportunities with the rest of project members. The specific group that has been more involved in Skills2Scale (SATRD, from the communication department) is interested mainly in **Horizon Europe** cluster 2, 4 and 5 **projects**.
- **Other** actions complementary to the former, such as MSCA DN or COST actions – which are similar in their **research-oriented** nature but fund different costs (pre-doctoral contracts and trainings vs networking and

short-term secondments, respectively), are also interesting from the UPV's point of view to extend collaboration; however, as in the previous, further conversations are needed.

3.1.1 Key stakeholders

The main stakeholders were identified in the beginning of the action (see D2.1 [20]). In case of a research-oriented collaboration, the participation of the SATRD research group from the communication department would be the only necessary member (or other research group, centre or department if the area of expertise does not match with SATRD's expertise). On the contrary, for continuing a collaboration with a similar nature, the following actors of the UPV ecosystem should have a prominent role:

- UPV's High management board.
- Professors from different departments' (apart from communication department) and research centres.
- Innovation and entrepreneurship ecosystem (IDEAS, StartUPV, i2T, Vice-rectorate for Innovation and Transfer).
- Other HEIs and research institutions from the region.
- Supporting local and regional innovation and entrepreneurship entities, both public (e.g., Las Naves, City hall, GVA) and private (e.g., GoHub, OpenTop, Lanzadera).
- Policy makers.
- Local and regional businesses (large companies, mid-caps, start-ups and spin-offs) related to the targeted technical area.

3.2 LU

University of Lapland is the northernmost university in the European Union conducting research on the Arctic, meaning global arctic responsibility, sustainable tourism, future services and reachability [21]. Beyond 5G technologies and applications, innovation and entrepreneurship align especially well with research focus on future services and reachability, but also sustainability in the tourism sector.

In 2024 University of Lapland had 170 active projects. Financial support for these projects is acquired by several different funding instruments. However, the most common financing instruments that the funding is obtained nationally were Finnish National Agency for Education and the Academy of Finland. In terms of international funding programmes European Social Fund Plus (ESF+), European Regional Development Fund (ERDF) and European Commission were utilized in acquisition of project funding [22]. Project work is essential part of the work at the university whether it is aiming to create new knowledge through research projects or fostering change through development projects. Arctic Centre, as part of the University of Lapland operating as a partner in Skills2Scale project is internationally acknowledged research institute experienced in Horizon Europe projects.

Ensuring the **sustainability of the results** achieved through Skills2Scale project LU continues to the work on the following activities:

- **Partner in other calls** and work with the R&D unit at the University of Lapland to continue building networks. Albeit interdisciplinary and multidisciplinary research are considered as strengths of the research at the university there could be even more collaboration with the Arctic Centre and university faculties especially in technology and innovation related research themes. The Arctic Centre staff members participating in Skills2Scale project submitted several proposals in 2024. Unfortunately, these proposals did not receive positive funding decisions, therefore there will be a gap between projects. This might interfere maintaining the cooperation structures and new connections inside the university and with external partners since there is not permanent staff running these networks.
- **Development of entrepreneurship opportunities** for students and staff. Skills2Scale project has cooperated with University of Lapland Startup Services and Research Services and also with Lapland University of Applied Sciences (LUAS) in order to promote entrepreneurship in Lapland region. This work has been done mainly by collaborating with Lapland Startup Incubator and Ecosystem project, in which LU and LUAS are partners along with Lapland Education Centre REDU, City of Rovaniemi and Kemin Digipolis oy. The project is co-funded by the European union aiming to establish startup entrepreneurship ecosystem in Lapland to foster innovation, job creation and economic growth and to address the themes of digitalisation and green transition [23]. There are a lot of synergies with Skills2Scale and the Incubator project resulting in mutually beneficial cooperation. The cooperation has taken forms of sharing views and ideas in discussions, organising local events together, taking part in expert interviews. Although, the startup incubator and ecosystem is currently running on project funding there are plans for future development and to institutionalize the work. This being said the partnerships created now will ensure future collaboration in the development of innovation and entrepreneurship in the region with the follow-up project of Skills2Scale.
- Including **the MOOC as part of the studies at LU**. There is a lot of potential in increasing technology related course content at the university. University of Lapland offers studies from Bachelor to PhD in art and design, education, law and social sciences [24]. There are not any technical study programmes yet digitalization is being taught as part of courses in e.g. entrepreneurship studies, administrative studies and management studies. The incorporation of the MOOC developed in Skills2Scale project as part of the teaching at the University of Lapland is currently under discussion. The Faculty of Social Sciences has shown initial interest. Further discussions with the faculty and subject as well as the teachers are required.
- **Steps toward capacity building and knowledge transfer in the future**. To begin with University of Lapland had low capabilities in B5G technologies and applications. There has been research and development projects on innovation and deep technology by the Faculty of Art and Design as well as Lapland University of Applied Sciences. Most of the students, academics and non-academic staff have shown none or only little interest towards learning about B5G. Lacking the infrastructure and expertise on the topic made it a difficult starting point for the project. There was also change in the project participation resulting in no teaching staff being involved in the project team. The work started with changing the mindset of people, showcasing the importance and benefits of B5G technologies, reaching out to stakeholders and building the University of

Lapland B5G Ecosystem. During the timeline of 15 months of Skills2Scale project, there has been co-operation with different research teams and faculties at the university of Lapland along with other HEIs and external stakeholders. Existing partnerships have been strengthened and new ones established. The groundwork has been done. There is a Beyond 5G Ecosystem at LU now that is ready for increasing its capacity and transferring knowledge in future projects.

3.2.1 Key stakeholders

Skills2Scale project has been handled by Arctic Governance research team at the Arctic Centre, University of Lapland. The team's expertise is in interdisciplinary and international research on law and governance with aspects such as safety and security, environment, climate change, sustainability and human rights [25]. Following research projects could be managed by the governance team, if the topics match with the previously mentioned research interests. If the following of Skills2Scale project would continue on the themes of deep technology, innovation and entrepreneurship the listed partnerships should be further strengthened:

- University of Lapland, the Faculty of Art & Design.
- University of Lapland, Entrepreneurship Studies.
- University of Lapland, Startup Services and Research Services.
- Lapland University of Applied Sciences, The Responsibility in Business and Services expertise group.
- Lapland University of Applied Sciences, FrostBit Software Engineering Laboratory.
- University of Oulu.
- External stakeholders such as regional funder Lapland Centre for Economic Development Transport and the Environment (ELY Centre), business developer Business Rovaniemi as part of the City of Rovaniemi, 5G network operators Telia Finland Oyj, Elisa Corporation.

3.3 UNU

Uzhhorod National University is a member of international associations, clusters, and consortia: Magna Charta Universitatum, Conference of Rectors of the Danube Region, European University Association (EUA), Eastern Partnership University Cluster (EaPUC), CS-DC UNESCO UniTwin, IEU GREEN Consortium (within the INTERACT project). This allows UzhNU to actively apply for participation in HORIZON Europe, IEU GREEN, Erasmus+ projects and contribute to all parts of the Euratom research and training program. UzhNU has experience in participating in Interreg, HUSKROUA, ticketing projects and projects funded by the Visegrad Fund.

To continue **long-term sustainable development measures**, Uzhhorod National University plans to follow the following steps:

- **Expand the number of courses related to B5G** technologies and their impact on various interdisciplinary areas. Develop specialised educational programs and courses for students, drawing on the experience of Consortium partners.

- **Involvement of government and business representatives** to create innovation hubs on the basis of UzhNU to promote innovation and entrepreneurial education in the region.
- **Expanding cooperation with potential stakeholders** from industrial cities of Ukraine: Kyiv, Dnipro, Kharkiv and Lviv.
- **Participation of UNU in international projects** (EIT, HORIZON Europe, Erasmus+, COST) together with Consortium partners.

3.3.1 Key stakeholders

The main potential UNU stakeholders were identified in Phase 1 of the Skills2Scale project, but during Phase 2 of the project, other stakeholder organisations were also involved, with whom contracts were signed and cooperation established. In particular, these are:

- **State institutions and public organisations:** State Service for Special Communications and Information Protection of Ukraine; Transcarpathian Entrepreneurship Support Fund "TES Fund"; Small Academy of Sciences of Transcarpathia, Innovation Development Fund (Ukrainian Startup Fund); NGO "Southern Region Development Agency"; and Association "Innovation Cluster "Regional Innovation Hub". The cooperation is aimed at exchanging experience, consolidating resources to work on joint research and innovation projects, implementing best practices and organising activities to promote awareness, knowledge among young people and non-formal education among innovators, entrepreneurs and stakeholders.
- **Commercial organisations and enterprises:** The largest mobile operators in Ukraine are Kyivstar and Ukrtelecom. Limited liability company «ZAKARPATPOLITECH». Cooperation with the above-mentioned organisations will provide new opportunities for the introduction of high-speed Internet on the basis of the university, as well as training and internships for students to gain new skills in the field of telecommunications, and also provides an opportunity for UNU students to improve their skills in the field of optoelectronics, in particular, internships in the design and manufacture of modern devices, implementation of their own design projects in the field of telecommunications, radio electronics and communications, digital circuitry.

3.4 TUL

In the past five years, TUL has solved over two dozen projects funded by the European Commission mostly under Horizon Europe and Erasmus KA2 calls. Key projects include H2020 initiatives like Twinning of Research Institutions, Euratom, Excellent Science, Industrial Leadership, Widening Participation, and the COST program. TUL actively participates in Erasmus+ programs, facilitating student and staff exchanges, and engages in projects under Interreg Europe, Visegrad Funds, and EEA grants. Since 2023, TUL has been part of the European Digital Innovation Hub, offering digitalization services to SMEs. The Skills2Scale project is TUL's first under the EIT. This project has led to the submission of two new collaborative projects:

1. A Horizon Europe project titled "Digitalisation and Circularity Models Approaches for Effective Sustainable Climate Transition in the Cultural and Creative Industries (CIRCULTURA)" in collaboration with UZHNU.
2. A national project INO4HEALTH supported by EIT Health (via Dex Innovation Centre) as an application guarantor interested in the future results of the project.

Through Skills2Scale, TUL has strengthened ties with the EIT Urban Mobility Innovation Hub East and DEX Innovation Centre in the Czech Republic (an innovation hub of EIT Health in the Czech Republic), and T-Mobile CZ (national mobile operator). The Plans for the Skills2Scale **project sustainability** include:

- Internationalising and developing an Interdisciplinary Innovation Laboratory to enhance students' entrepreneurial skills, collaborating with Dex Innovation Centre under EIT Health, including events like i-Days and Technology Transfer Week at TUL.
- Incorporating study materials from the Skills2Scale project into other TUL courses and programs.
- Motivating of academic staff to innovate and engage in multidisciplinary teaching by announcing a competition for the best pedagogical achievement at TUL (from 2024).
- Expanding interdisciplinary research activities and seeking new project themes within the European Research Area, especially those linking social sciences, humanities, and engineering. TUL is particularly interested in Horizon Europe Pillar II Cluster calls (Health, Culture, Creativity, Inclusive Society, Digital Industry and Space, Climate Energy, and Mobility) and Pillar III activities under EIT Health, Urban Mobility, and Cultural and Creative Industries. Other promising avenues include the Erasmus+ Cooperation Partnership (KA2), EEA grants, MSCA, Interreg Europe, and COST programs.

In cooperation with T-Mobile CZ, constantly upgrade and innovate the campus 5G network at TUL for teaching and research purposes.

3.4.1 Key stakeholders

An interdisciplinary team led by TUL's Faculty of Economics includes representatives from three faculties and a research center at TUL. Local events have involved other TUL faculties and the regional innovation ecosystem. Key internal stakeholders include deans, vice-deans, department heads, research groups from the Institute for Nanomaterials, Advanced Technologies and Innovation, SBC TUL, and the technology transfer company TUCTUL. The primary external stakeholder is the LipoInk incubator, supported by the Liberec regional authority and CzechInvest.

To continue the collaboration, the main contacts are:

- Main contact person: Ales Kocourek, Dean of the Faculty of Economics.
- Deans and Vice-Deans for Science, Research, Internationalisation, and Development.
- Heads of departments and research groups at TUL.
- Key representatives of the TUL innovation ecosystem (SBC TUL, TUCTUL, Vice-Rector for Science and Research, Vice-Rector for External Relations).
- Regional innovation entities (Dex Innovation Centre, LipoInk, CzechInvest).
- Regional businesses (large enterprises, SMEs, start-ups, and spin-offs) in relevant technology areas.

3.5 Envolve

Envolve Entrepreneurship has been quite active in Deep Technologies, lately. Even though it is an industry-agnostic business support organisation, in the last 4 years a lot of its extrovert activities are towards this direction. The participation in the Skills2Scale project was not the first in terms of EU funded projects. Evolved5G was the first one, in collaboration with UPV. After Skills2Scale, several EU funded projects in Deep Tech followed, such as Web3Tour, DeepTechValleys and RInnoValleys. Moreover, a decent number of proposals have been submitted. Last, Envolve is an official member of the 6G Smart Networks and Services Industry Association (6G-IA). In our effort to **continue the legacy of Skills2Scale**, more specifically, ENVOLVE plans to:

- Continue the collaboration with stakeholders of the Deep Technologies & Beyond 5G Technologies ecosystem, in other European project proposals.
- Expand our presence and activity in the 6G IA Network, by exchanging knowledge and best practices with the community partners.
- Promote the Skills2Scale MOOC to our School Entrepreneurship contest, to attract and train deep tech talents of the greek schools.
- Prepare the continuation of the Skills2Scale project and explore other programmes that can fit with this new proposal.
- Raise awareness and promote RIS3 recommendations for the development of Deep Technologies developed, through DeepTechValleys, an Interreg Europe programme that Envolve is partner and Communications Manager of.

3.5.1 Key stakeholders

Envolve Entrepreneurship has a lot of Deep Tech startups in its portfolio. The organization does not operate itself with specifically focused research on this thematic, however, through its services, it has developed a network of very strong stakeholders of the field. In its effort to continue being pioneers in Deep Tech innovation, Envolve has developed a multidimensional network of external partners:

- Public Authorities, such as the Ministry of Development & Investments, the Ministry of Digital Governance and the General Secretariat for Research and Innovation
- Greek Educational Centers, such as HEIs (Aristotle's University of Thessaloniki, among others) and Research Centers (CERTH, NCSRD etc.)
- Startups that utilize Deep Technologies to foster innovation (DataPhoria, RTSafe, Apifon among many others)
- Regional authorities that are able to create policy instruments and promote policies that improve the ecosystem's capacities, such as Central Macedonia, Regional Development Fund of Central Macedonia, Municipality of Egaleo (a Smart City), etc.

Envolve has managed to create a network of stakeholders that are from all the helix' of the quadruple helix of stakeholders. Through these multidimensional partnerships, Envolve can find partners of all kinds to cooperate in innovation projects.

3.6 NCSRD

The National Centre for Scientific Research Demokritos (NCSRD) is the biggest research centre in applied sciences and engineering in Greece, and it is a self-governing research organisation under the supervision of the Greek Government. NCSRD participates in the project through the FutuRe COmmunication Networks (FRONT) Research Group of the Institute of Informatics and Telecommunications (IIT), which is actively involved in many areas of information technology and telecommunications, ranging from conducting basic research to goal-oriented research, but also development and application of processes and products. The IIT of NCSRD is a member of various EU-funded research projects, a list of which can be found here. With respect to the continuation of NCSRD for **long-term sustainability actions**, the main focus is in the following aspects:

- Continuously enhancing the **training program** created during the project, that is designed to enhance the capacity of HEIs in fostering institutional engagement and change in the field of Beyond 5G technology. Enhancements will include new state-of-the-art educational material and a wide variety of use case scenarios to which the provided theoretical knowledge can be applied.
- Transfer the new content and educational material created for the training program into the **MOOC** in the form of presentation slides and videos to make it more accessible to students.
- Participate in **innovation and business related events** organized by Envolve to stay informed about industry needs and adapt our research to potentially develop new patents and ideas.
- Achieve **new collaborations** with members of the Skills2Scale project in the research fields of Beyond 5G, IoT, Innovation and Entrepreneurship. So far two new collaborations have been achieved between UPV and NCSRD, and new ones are trying to be formed through collaborative research proposal submissions.

3.6.1 Key stakeholders

For research-oriented collaborations, NCSRD can participate in projects through its individual research groups, depending on their expertise. In the case of the FRONT research group of the Institute of Informatics and Telecommunications of NCSR "Demokritos," the main responsible contact point is Dr. Harilaos Koumaras (Researcher B – Head of the FRONT Research Group). The higher management board of directors represents the institute and the center, respectively.

Regarding the innovation and entrepreneurship ecosystem, existing collaborations will be enhanced. The focus is on national and international innovation and entrepreneurship entities, including both members of the NCSRD ecosystem and external organizations. The already successful collaboration with SMEs and large industry companies

in Greece will continue to be supported, with efforts to engage them in more projects related to the scope of Skills2Scale and the EIT HEI Initiative, leveraging their unique perspectives in the field of 5G and beyond.

3.7 Fogus

Fogus is a highly specialised SME with vast experience on R&D activities around mobile communications. After concluding Skills2Scale, there are several follow-up activities that can **sustain the momentum** and enhance the impact of the project.

- **Dissemination and Outreach:** Publish a comprehensive report detailing the project's outcomes, methodologies, and key findings. Submit articles to academic journals, industry magazines, and online platforms to reach a wider audience. Organize or participate in conferences and workshops to present the results and share insights. Host webinars and online seminars to engage with a global audience.
- **Capacity Building and Continuous Education:** Participate in advanced courses and certification programs in 5G technology and entrepreneurship for continued education. Offer specialized training for faculty to keep them updated on the latest developments in 5G and entrepreneurial practices. Contribute to online platforms with modules, tutorials, and resources related to 5G and entrepreneurship. Further develop Massive Open Online Courses (MOOCs) to provide accessible training worldwide.
- **Collaboration and Networking:** Participate in networks of HEIs, industry partners, and policymakers to foster ongoing collaboration and knowledge exchange. Create communities of practice where participants can share experiences, challenges, and solutions. Strengthen partnerships with industry leaders in the 5G sector to provide practical insights and real-world applications. Facilitate internships, joint projects, and research opportunities for students and faculty.
- **Monitoring and Evaluation:** Conduct surveys and gather feedback from participants to assess the impact of the training and identify areas for improvement. Use the feedback to refine and enhance future training programs. Implement an impact assessment framework to measure the long-term effects of the training on HEIs and their graduates. Track career progress and entrepreneurial success of participants to evaluate the effectiveness of the training.
- **Sustainability and Scale-Up:** Apply for grants and funding from EU programs, national government, and private sector sources to sustain and expand the project results. Explore public-private partnerships to ensure financial sustainability. Develop a model for replicating the training program in other regions and countries. Share best practices and guidelines to help other HEIs implement similar initiatives.
- **Policy and Advocacy:** Advocate for policy changes that support the integration of 5G and entrepreneurship training in higher education curricula. Engage with policymakers to highlight the importance of advanced technology and entrepreneurial skills in the education sector. Develop strategic roadmaps for HEIs to integrate 5G and entrepreneurship into their long-term planning and curriculum development. Provide guidance on aligning training programs with industry needs and technological advancements.

3.7.1 Key stakeholders

- **Industrial partners:** Companies and organizations in the 5G technology sector that can provide practical insights, internships, and funding support. Entrepreneurs and startups in the tech industry who can mentor students and collaborate on projects.
- **HEIs:** Universities and colleges that were part of the original project Consortium and new institutions interested in adopting the training model.
- **Government and Policy Makers:** EU bodies and national government agencies responsible for education, research, and innovation policies. Policy makers who can advocate for the integration of 5G and entrepreneurship into higher education curricula.
- **Funding Agencies:** EU funding programs such as Horizon Europe, Erasmus+, and other relevant funding bodies. National and regional funding agencies that support educational and research initiatives.
- **Professional Associations and Networks:** Associations related to telecommunications, technology, and entrepreneurship that can provide a platform for dissemination and networking. Academic and professional networks that can support capacity building and continuous education efforts.
- **Technology Providers:** Companies that develop and provide 5G technology and infrastructure, offering both technical support and industry insights.
- **Research Institutions:** Research centres and institutes focused on 5G technology and entrepreneurship that can collaborate on advanced research projects and publications.
- **Non-Governmental Organizations (NGOs):** NGOs working in the field of education, technology, and entrepreneurship that can support outreach and capacity-building efforts.
- **Media and Communication Partners:** Media outlets and communication firms that can help disseminate project outcomes, success stories, and ongoing activities to a broader audience.

3.8 Consortium-wise

Among the different mechanisms discussed in Section 2, we can differentiate among those more upskilling, training-oriented versus those with a clearer research-oriented focus. Among the first class, the Consortium highlights:

1. **EIT HEI's next calls** for proposals, as main possibility for continuation (identical nature).
2. **ERASMUS+** partnerships and alliances, targeting HEIs' upskilling to receive and better form students.
3. **MSCA's Doctoral Networks,** for training PhD students in a specific, common field and support their formation.
4. **European Innovation Ecosystems**, mostly to be led by innovation agents, building new or enhancing the existing knowledge triangle connections while enhancing the skills of the actors involved.
5. **EIT Deep Tech Talent Initiative,** which targets innovation capability of students from different ages.
6. **Interreg** projects from the ETC, focusing on collaboration between entities.

Moving into a more research-oriented collaboration, other key mechanisms include:

1. **COST Actions**, in which research-oriented networking could be maintained, towards a common multidisciplinary research goal.
2. **Horizon Europe Pillar 2 calls**, preparing highly research and/or innovative proposals. Cluster 1, 2 and 4 are those that better fit the Consortium expertise (at least, of the regular members involved).
3. **SNS calls,** with specific focus on B5G and 6G.

Partners are already in contact exploring collaboration opportunities to continue the cooperation, regardless of the type. In some cases, funding has already been achieved, if not for the Consortium as a whole at least between partners. In addition, partners are willing to continue some of the collaboration (e.g., promotion and support with the MOOC) even in the absence of dedicated funds.

4 Sustainability risks and mitigation actions

Risk (WP / Likelihood / Criticality)	Mitigation measures
Partners not obtaining funds to continue a substainable cooperation (WP5 / Low / High)	HEIs do not have much capacity to access to additional funds beyond public funds, either granted via regional funds (policies) or through competitive processes. Partnes have proven expertise in obtaining funds, in some cases already achieved to continue partnerships. Some cooperation (to prepare proposals, to continue implementing best practices) has already been agreed even in the absence of funding.
Best practices not supported over time (WP4 / Low / High)	This would be critical as it would mean the outcomes have not been substained over time. Changes over HEIs are slow as they are long structures, and at this moment some of the best practices are not rooted / fully integrated as part of the HEIs' curricula. This means that at this moment they depend on the people involved in the project working towards they long-time success. In any casem 5GIIL and the Sturtup centre best practices are quite cimented and both TUL & UNU are committed to continue the effort in the following years. UPV is also compromised to continue evolving the MOOC and making it a verified course for edX.
Outcomes not influencing other HEIs (WP6 / Medium / Medium)	Another good outcome would be that the knowledge gained and materials generated are leveraged by HEIs external to the project, not only to the project memebers. In this line, the Consortium is already acting, by fostering the MOOC outside the project participants, and publishing some of its best practices in the EIT Resource Hub. Additionally, partners will be glad to collaborate with EIT HEI initiative in promoting the activities performed in Skills2Scale in future dissemination/networking events.
Partnerships with external entities not lasting over time (WP2 / Low / High)	Thanks to the project, both existing and missing connections from HEIs with their innovation and B5G ecosystems were identified, working on strengthing the former and establishing the latter. This partnerships are a win-win for all partners involved, therefore the aim of the Consortium members is to continue a synergetic collaboration with all of them.
Trained start-ups not impacting the market (WP3 / High / Medium)	The project has executed two cycles of acceleration. While Consortium partners would be glad to seeing their success, these endevours are risky. The Consortium members cannot make much towards influencing in their success, apart from contrinuting to it via the training provided. In any case, HEIs and private partners of the Consortium are always open to explore other ways of collaboration in the future.

Training efforts not impacting the academic and non-academic staff trained (WP1 & WP3 / Low / High)	The training made has been on both technical and innovation aspects. People working in HEIs are well educated and, in most cases, aiming at learning new methodologies and best practices, therefore the Consortium expects that the formation provided has been of interest and useful to them. Internal contacts will be made (informally) to gather feedback.

5 Conclusion

This deliverable has presented an overview of the European funding ecosystem, presenting those schemes that better offer the possibility of continuing and scaling up the activities of the project. Particularly, EIT HEI's next calls for proposals of similar nature, ERASMUS+ partnerships and alliances, MSCA's Doctoral Networks, European Innovation Ecosystems, EIT Deep Tech Talent Initiative, Interreg projects, COST Actions, Horizon Europe Pillar 2 calls, and SNS calls provide such opportunities, in some cases oriented primarily towards research and innovation whereas in other towards training and mentoring. Also, Individual plans per partner have been shared, identifying the key stakeholders for such continuity. HEIs are showing interest in continuing implementing the best practices designed, and the willingness to look for funding opportunities to support them. Besides, there are some evident risks to this strategy, as it is heavily dependent to the success in the upcoming calls for proposals. Still, partners have demonstrated that they are willing to follow this path, as a continuation of collaboration has been granted between some of them, while others are being prepared.

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