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European Digital Innovation Hubs in Digital Europe Programme

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Disclaimer: This is a document to prepare the implementation of European Digital Innovation Hubs in Digital Europe Programme. It is based on the draft Digital Europe Programme regulation and 3 meetings with Member State representatives where some of these ideas were discussed. The Digital Europe Programme is subject to approval by the European Parliament and the Council.

The views expressed in this version are for further discussion with the participants at the 3rd Stakeholder Forum on Digitising European Industry “Artificial Intelligence and Digital Innovation Hubs – beyond 2020”. The European Commission cannot be held liable for any of the views expressed in this document.

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SUMMARY – EUROPEAN DIGITAL INNOVATION HUBS

European Digital Innovation Hubs (EDIH) will play a central role in the Digital Europe Programme to stimulate the broad uptake of Artificial Intelligence, High Performance Computing (HPC) and Cybersecurity as well as other digital technologies by industry (in particular SMEs and midcaps) and public sector organisations in Europe. They are one-stop shops that help companies become more competitive with regard to their business/production processes, products or services using digital technologies, by providing access to technical expertise and experimentation, so that companies can “test before invest”. They also provide innovation services, such as financing advice, training and skills development that are needed for a successful digital transformation. Environmental issues will be taken into account, in particular with regard to energy consumption and low carbon emissions.

European Digital Innovation Hubs will have both local and European functions. EU funding will be made available for hubs that are already (or will be) supported by their Member States (or regions), so as to increase the impact of public funding. The Digital Europe Programme will increase the capacities of the selected hubs to cover activities with a clear European added value, based on networking the hubs and promoting transfer of expertise. Member States have an essential role in the selection process of the EDIHs; the initial network of EDIHs will be established from a list of hubs designated by Member States.

This document provides initial ideas on how to implement the Digital Europe Programme, how it complements the support to digital transformation of the economy under other EU programmes, and how it contributes to a successful network of hubs covering all regions of Europe. This document is made available just before the 3rd Stakeholder Forum on Digitising European Industry “Artificial Intelligence and Digital Innovation Hubs – beyond 2020”, which takes place on 13-15 November 2019 in Madrid. During the event there will be the occasion for the stakeholders to provide feedback which the European Commission may use to prepare the first Workprogramme. The first restricted call for EDIHs is expected to be launched in Autumn 2020 so that the selected EDIHs can start their operation in 2021. This implies that Member States should designate their hubs to the Commission by August 2020.



Figure 1. Digital Europe for Digital Innovation Hubs at a glance

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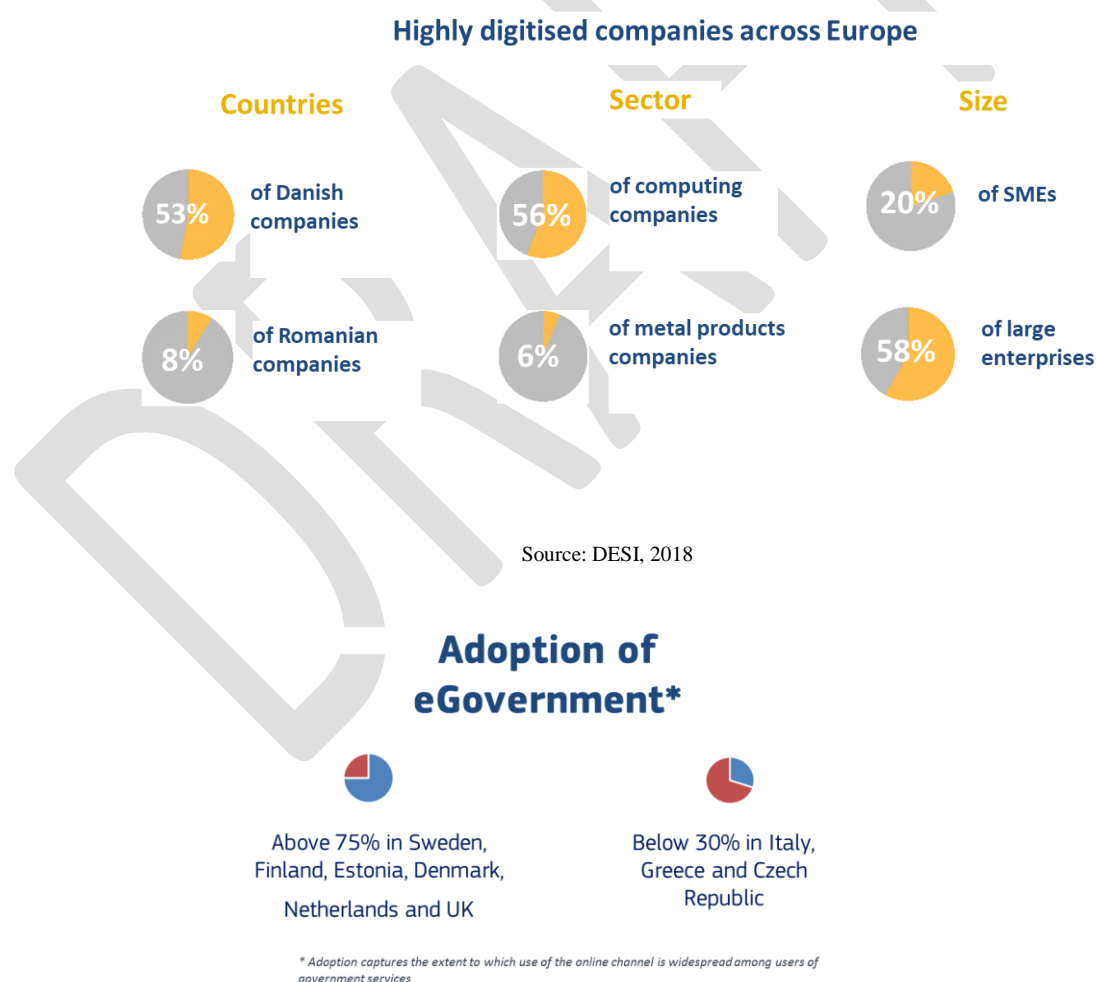
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1. CONTEXT

1.1. Further need for digital transformation

The digital transformation of the economy is key for Europe to remain competitive internationally. Our companies and public sector organisations need to integrate digital technologies into their business processes, products, and services to fully benefit from the efficiency gains and innovation they may bring, while remaining environmentally sustainable and reducing greenhouse gas emissions. In particular, the smart use of data can be a powerful lever to drive growth, create new jobs and open up new business models and innovation opportunities. Three years after the launch of the Digitising European Industry Strategy and the eGovernment Action Plan, European economy has made significant progress. The level of digitalisation however remains uneven, depending on the sector, country and size of company: **only 20% of SMEs in the EU are highly digitised**. A similar pattern is observed for the adoption of eGovernment, where the overall adoption of eGovernment services is 53%, with some countries reaching more than 75% and other countries still below 30% (see Figure 2). European Digital Innovation Hubs have a key role to play to address these gaps.



Source: eGovernment Benchmark Insight Report, 2018

Figure 2. Level of digitalisation and adoption of eGovernment

1.2. What is a European Digital Innovation Hub?

A European Digital Innovation Hub (EDIH)¹ is a single organisation or a coordinated group of organisations with complementary expertise, with a not-for-profit objective² that support companies – especially SMEs and mid-caps – and/or the public sector in their digital transformation. EDIHs offer services such as (see Figure 3):

- **Test before invest:** The Digital Europe draft regulation mentions: “*raise awareness and provide, or ensure access to, digital transformation expertise, know-how and services, including testing and experimentation facilities*”. The group of services enabling test before invest may include: awareness raising, digital maturity assessment, demonstration activities, visioning for digital transformation, fostering the integration, adaptation and customisation of various technologies, testing and experimentation with digital technologies (software and hardware), knowledge and technology transfer. Special focus will be on the key technologies promoted in Digital Europe Programme: HPC, AI, and Cybersecurity.
- **Skills and training:** The draft regulation mentions: “They will also provide support in the area of advanced digital skills (e.g. by coordinating with education providers for the provision of short-term training for workers and internships for students)”. To ensure the appropriate level of digital skills within the supported organisations in order to make the most of digital innovations technologies, EDIHs' services should include advertising, hosting or providing of training, boot-camps, traineeships, as well as supporting the implementation of the short-term advanced digital skills training courses and job placements developed as part of the DEP Advanced Digital Skills pillar.
- **Support to find investments:** The draft regulation mentions “to support companies, especially SMEs and start-ups, organisations and public administrations to become more competitive and improve their business models through use of new technologies covered by the Program”. Therefore, this category of services may include: access to financial institutions and investors, supporting the use of InvestEU and other relevant financing mechanisms, in close co-operation with the foreseen InvestEU Advisory Hub³ and the Enterprise Europe Network (EEN)⁴. For the public sector in particular, as one of the largest purchasers of ICT, this service could furthermore provide support to leverage the purchasing power of the public sector, transforming it into a large innovation buyer.

¹ Digital Europe Programme has the following definition: ‘European Digital Innovation Hub’ means legal entity selected in accordance with Article 16 in order to fulfil the tasks under the Programme, in particular providing directly, or ensuring access to, technological expertise and experimentation facilities, such as equipment and software tools to enable the digital transformation of the industry, as well as facilitating access to finance. European Digital Innovation Hub shall be open to business of all forms and sizes, in particular to SMEs, midcaps, scale-ups and public administrations across the Union;

² The beneficiaries should declare that for the activities covered by the grant they apply a not-for-profit objective, i.e. all money earned by them or donated to them is used in pursuing the EDIH’s objectives and keeping it running.

³ The InvestEU Advisory hub is foreseen to become part of the future InvestEU programme (see Section 1.6)

⁴ The Enterprise Europe Network helps businesses innovate and grow on an international scale. It is the world’s largest support network for small and medium-sized enterprises (SMEs) with international ambitions. (<https://een.ec.europa.eu>)

- **Innovation ecosystem and networking:** The draft regulation mentions: “*European Digital Innovation Hubs should act as facilitator to bring together industry, businesses and administrations which are in need of new technological solutions on one side, with companies, notably start-ups and SMEs, that have market-ready solutions on the other side*”. No company can innovate alone. It will help companies greatly if they are brought into contact with other companies of their value chain, with innovators, or early clients that want to test solutions. EDIHs should play this brokering role and bring e.g. end-users and potential suppliers of technological solutions into contact with each other for e.g. experimentation and testing, or public administrations and GovTech companies to promote co-creation. The non-profit objective of EDIHs is important in this respect, and they might promote local companies to improve the overall economic strength of their local economy. When suitable local partners may not be found, the hubs can network with other EDIHs to find a matching partner elsewhere in Europe. Hubs can only become good brokers if they do regular technology scouting, in order to map the innovation ecosystem, and understand needs and opportunities. Structured relationships with regional authorities, industrial clusters, SME associations, business development agencies, incubators, accelerators, EEN, EIT Co-location Centres, and chambers of commerce will greatly help the brokering function.

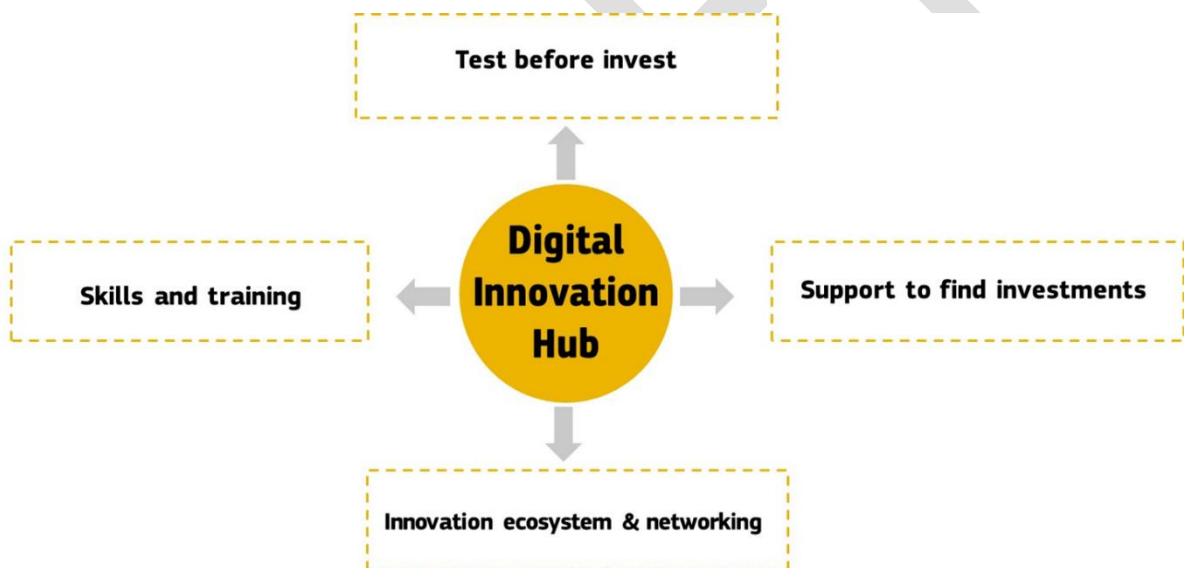


Figure 3. Main functions of European Digital Innovation Hubs

1.3. Digital Europe Programme knowledge transfer mechanisms

The Digital Europe Programme will focus on capacity building in high performance computing (HPC), cybersecurity and artificial intelligence (AI), related advanced digital skills as well as digital solutions / interoperability for the public sector. Technologies and knowledge developed under Specific Objectives 1, 2 and 3 will be made available by HPC Competence Centres, Cybersecurity National Coordination Centres, and AI Reference sites. Specific Objective 4 will create an offer of trainings and job placements available for the different target groups. Specific Objective 5 will deliver digital service infrastructures for areas of public interest. To make sure that those capacities are actually used by companies and public administrations, European Digital Innovation Hubs will

work closely with the relevant specialised centres or consortia responsible for the different DEP projects and make sure that companies and public administrations can experiment with those technologies and apply them according to their needs. For example,

- the hubs can help SMEs to make use of the advanced computing facilities of the HPC centers;
- the hubs can also promote the AI-on-demand platform, which makes AI algorithms and public data sets available for anyone. EDIHs can help SMEs to experiment with this platform, and identify those datasets and algorithms that are relevant for the needs of those companies;
- another important activity are the security audits for SMEs. Here also, the EDIHs should promote this to their stakeholders;
- Related to training, the EDIHs may be one of the organisations selected to provide short-term training courses or they may just host them for organisations in their area. In any case, they should advertise the available trainings that are relevant for their stakeholders. The hubs should also promote job placement opportunities to their network of SMEs / public administrations;
- Section 1.4 describes in more detail some examples of EDIH activities for the public sector.

Special horizontal support activities are foreseen to support the necessary knowledge transfer from the Specific Objectives towards the EDIHs and vice versa (see Section 2.5)

1.4. EDIHs for public sector: digital service infrastructures (DSIs) and interoperability solutions

Modernising public administrations and services through digital means is crucial to reducing administrative burden on industry and on citizens in general by making their interactions with public authorities faster, more convenient and less costly, as well as by increasing the efficiency and the quality of the services provided to citizens and businesses.

Interoperability of European public services concerns all levels of administration: Union, national, regional and local. Besides removing barriers to a functioning Single Market, interoperability facilitates successful implementation of policies and offers great potential to avoid cross-border electronic barriers, further securing the emergence of new, or the consolidation of developing, common public services at Union level. In order to eliminate fragmentation of European services, to support fundamental freedoms and operational mutual recognition in the EU, there must be a holistic cross-sector and cross-border approach to interoperability which is promoted in the manner that is the most effective, and the most responsive to end-users. This implies that interoperability is to be understood in a broad sense, spanning from technical to legal layers and encompassing policy elements in the field.

Digital Europe Programme foresees to deploy the so-called “Transformation Platform Ecosystem”, which includes the European Digital Service Infrastructures and building blocks (eID, eInvoicing, eDelivery, eSignature, context broker, etc.), interoperability

solutions (eHealth patient summary and ePrescription)⁵, as well as the Open Data Platform, which can serve both the public and the private sector.

EDIHs could serve local and regional public administrations and other public sector organisations that aspire to use the Transformation Platform Ecosystem, to be compliant with the Principles of the Tallinn declaration on E-Government⁶. Furthermore, EDIHs could help public administrations to use other agreed standards and open source solutions, access government platforms or shared infrastructures (offered on the European or MS level), experiment with Artificial Intelligence and Blockchain for real-time policy-making (e.g. traffic optimisation), or help public administrations improve their cybersecurity. In this context, EDIHs could in particular assist public authorities/buyers to fully use the potential of procuring innovation, and bring them into contact with companies that are ready to supply the necessary digital technology solutions ('technology providers'), stimulating further the development of the local ecosystem.

Not all EDIHs will need to support the public sector, but in the overall network, there needs to be a reasonable amount that do.

1.5. Foreseen use cases for networking of EDIHs

Digital Europe will support the European DIH network and EDIH collaboration to, for example, build EDIHs' local capacity to serve more than one region/country, to export a DIH's excellence, and to connect ecosystems.

- **Exporting / Importing EDIH excellence:** Based on complementary competence and infrastructure, EDIHs could export their specialisation to SMEs in other MS, in the form of opening up their facilities and knowledge to clients outside of its own region. Vice versa, if an EDIH misses certain expertise or facilities to support its own regional clients they can ask the support of other EDIHs who would have this expertise, and that way import expertise offered by other EDIHs. This could be done on an individual basis, starting from the needs of individual customers, but also in a more proactive way where several hubs together combine their knowledge and facilities to develop common services for their stakeholders.
- **Connecting ecosystems:** Just like EDIHs at the local level build ecosystems by bringing into contact actors along the value chain to develop new innovations, at a European level several hubs can connect different ecosystems together by identifying innovation opportunities for users and suppliers coming from different regions. This will help SMEs expand and tap into other markets, develop EU value chains, create new business opportunities for companies or help commercialise earlier innovation experiments or pilots. Also other types of common interest projects (e.g. open platforms, standards, standardised services, shared infrastructure, etc.) in collaboration with companies and stakeholders from the different regions can connect ecosystems and will help avoid unnecessary duplication of investment or give access to infrastructure at a lower cost.

⁵ <https://ec.europa.eu/cefdigital/wiki/display/EHOPERATIONS/eHealth+DSI+Operations+Home>

⁶ <https://ec.europa.eu/digital-single-market/en/news/ministerial-declaration-egovernment-tallinn-declaration>

- **Common investments:** Member States and Regions may decide to invest together in common EDIHs. Potential examples of projects that are ready for such common investments by several regions (often coming from different Member States) are available on the Smart Specialisation Platform for Industrial Modernisation⁷. They are based on the Vanguard Initiative⁸ collaboration model.

These activities will lead to hubs learning from each other and therefore greater cohesion in the capabilities of the hubs to help their customers with their digital transformation.

1.6. Relationship with other programmes

Digital Transformation will not only be supported under the Digital Europe Programme, but also through Horizon Europe, and European Regional Development Funds. Furthermore, there will be dedicated financial instruments in InvestEU to support the uptake of advanced digital technologies such as AI and Blockchain. Every programme focuses on particular aspects and there is a clear delineation between them, as explained in the following section (see Figure 4).

Digital Europe programme: This programme is focused on investments in digital capacities, and as such the funding foreseen for European Digital Innovation Hubs will be directed towards the hubs, with the objective that they invest in their capacity, i.e. latest equipment and facilities as well as employees to deliver services to their stakeholders. The selection process will be partly done together with the Member States, and the objective is to ensure a broad geographical coverage across Europe.

Horizon Europe programme: This is the framework programme for Research and Innovation. It is foreseen to continue with activities that were already present in H2020, such as ICT Innovation for Manufacturing SMEs (I4MS). These activities are directed towards companies that work together with Digital Innovation Hubs to experiment and test with novel digital solutions to improve their businesses. Organisations that participate in the test-before-invest experiments will be eligible for funding. European Digital Innovation Hubs may participate to these projects, just like other types of Digital Innovation Hubs or organisations with the appropriate knowledge.

European Regional Development Funds (ERDF) post-2020: Through its policy objective “Smarter Europe” ERDF may also support the construction and up-grading of Digital Innovation Hubs, by supporting them in purchasing equipment, infrastructure, and software, in delivering services to SMEs and public sector, etc, provided that their objectives fall within the following: (i) enhance research and innovation capacities and the uptake of advanced technologies; (ii) reap the benefits of digitisation for citizens, companies and governments; (iii) enhance growth and competitiveness of SMEs, by building local innovation ecosystems or (iv) developing skills for smart specialisation, industrial transition and entrepreneurship. The scope of these Digital Innovation Hubs is usually the local economy. A prerequisite for investments of ERDF in Digital Innovation Hubs is that these are mentioned in the Partnership Agreements and/or in the operational programmes that are used for planning of the shared management funds such as ERDF.

⁷ <https://s3platform.jrc.ec.europa.eu/industrial-modernisation>

⁸ <https://s3vanguardinitiative.eu/>

New in the future ERDF programme is that interregional investments are encouraged through a new Interregional Innovation Investment Instrument. Therefore several regions (possibly coming from different Member States) may also decide to invest together in Digital Innovation Hubs.

ERDF and Digital Europe Programme can be combined for European Digital Innovation Hubs⁹. It will be possible to use ERDF for the investments that are expected to be done by the Member States or their regions, provided that this combination introduces a benefit to the whole of the Europe Union¹⁰. In fact, the local hub will that way become a European Digital Innovation Hub, and open up its capacities to the whole of Europe. The same reasoning applies to Digital Innovation Hubs funded through interregional investments. Also these type of investments may be complemented by Digital Europe, in case they are selected to become a European Digital Innovation Hub.

InvestEU Programme builds on the successful model of the Investment Plan for Europe, the Juncker Plan. It will mobilise public and private investment using an EU budget guarantee. There will be dedicated financial instruments to support the digital transformation, and in particular StartUps/ScaleUps in the area of AI and blockchain, and the uptake of these technologies by traditional companies. Financial intermediaries such as banks or equity investors will integrate these instruments in their offer.

The foreseen synergies with European Digital Innovation Hubs and InvestEU is that the hubs help to overcome a knowledge gap in financial intermediaries and companies: from the side of financial intermediaries it is difficult to estimate the risks associated with investments in digital technologies, and from the side of companies it is difficult to estimate costs and expected return on investments.

Therefore, when EDIHs have supported companies to test certain innovations and the companies decide to invest further, the hubs can bring them into contact with the right financial intermediary. The “test before invest” service allows a company to make a realistic return on investment scenario that can help financial institutions to make a better decision. It will also be easier for companies to estimate the level of investments they need and to convince the investor that they are appropriately equipped to make the best of the investment.

⁹ Section 2.2 explains the co-investment principles for EDIHs: it is foreseen that both the Member State (or region) and the European Commission finance the hub, each one for 50%.

¹⁰ If the hub would carry out only local activities, and it would be financed 50% from ERDF and 50% from Digital Europe, the total contribution coming from the EU budget is considered to be too high. If however the hub’s functioning would benefit the whole of Europe, it is allowed to use ERDF for co-investment. In the case of European Digital Innovation Hubs, their benefit is for the whole of Europe, because of the networking and the opening up of facilities, so this requirement is met.



Figure 4. The programmes complement each other

2. IMPLEMENTATION OF EUROPEAN DIGITAL INNOVATION HUBS

This chapter will focus on design principles of the EDIHs. It especially highlights some principles that are put forward in the draft regulation or that have been discussed with the Member States in one of the preparatory meetings.

2.1. Size of the network of European Digital Innovation Hubs

The draft regulation states that the “*network of European Digital Innovation Hubs should ensure a broad geographical coverage across Europe and should also contribute to the participation of the outermost regions in the Digital Single Market*”.

Digital Europe Programme is an investment programme in digital capacities and wants to make an impactful contribution to the capacity of European Digital Innovation Hubs. The Commission therefore proposes to invest between 0,5 and 1M€ per year in each hub. Together with the contribution of the MS, this would add up to a significant investment between 1 and 2 M€ per year per EDIH. With the current budget proposal for Digital Europe, it is foreseen to support between 130 – 260 hubs in the EU. These numbers will be adapted once the final budget is agreed with the European Council and Parliament.

For the geographical distribution, it is proposed to leave maximum flexibility to the Member States. Every Member State will get a pre-defined share¹¹ of the overall funding

¹¹ The exact way to define this share is under discussion with the Member States

available for EDIHs in Digital Europe Programme. They subsequently get the opportunity to designate a number of hubs, geographically spread over their territory, that respond to the demand of industry and public sector while taking into account existing assets of the country. Special measures can be proposed for the outermost regions. Depending on the needs of individual hubs, it can be decided to invest more in some and less in others.

2.2. Co-investment principles

To operate a European Digital Innovation Hub it is necessary that there is (access to) a state-of-the-art physical infrastructure (a building to receive customers, training facilities, showroom / demonstration facilities, testing and experimentation equipment and facilities) that supports the objectives of the hub. Furthermore, qualified personnel is needed to provide services to SMEs and/or public sector organisations.

Member States (possibly together with their industry) and the European Commission will both invest in the European Digital Innovation Hubs¹². Digital Europe Programme foresees funding in the form of a grant, for a duration of 3-7 years. After the duration of the grant, the capacities built up with the support of the grant are expected to remain available (in some form) to SMEs and/or public sector organisations. It is not necessary to achieve full commercial sustainability after the end of the project.

Specific cost items that could be funded through the Digital Europe grants

- Depreciation costs for equipment and facilities, both hardware and software
- Qualified personnel of the EDIH for delivering digital transformation services to SMEs or public administrations, including subcontracting for specialists
- Travel grants for hub personnel and local stakeholders to work with other hubs

The Digital Europe grant will fund 50% of the requested amount, capped by the limits explained in section 2.1. Member States (or their regions) should contribute an equal amount, either in-kind or in-cash. The proposal for the grant needs to justify the requested funding in terms of their expected KPIs on activities with European added value and their expected impact.

Several situations can occur:

¹² Please note that the combined funding could lead to State aid issues. State aid is, as the name says, aid given by a State. Since for the European Digital Innovation Hubs Member State funds will be combined with Digital Europe funding, it could be considered to be an aid that distorts or threatens to distort competition, which is not allowed according to Article 107 (1) of the TFEU. This issue is currently under discussion with DG Competition of the European Commission.

- Member States have already built up Digital Innovation Hubs in the past, and want to designate these for Digital Europe Programme: MS can contribute with cash, or in-kind by contributing e.g. personnel or depreciation of previous investments in the hub.
- There is no Digital Innovation Hub yet in the region, and MS will invest in it during Digital Europe Programme. In this case, MS can again contribute in-kind or in cash with the foreseen investments in the hub. If the project on the MS side has a different timing than Digital Europe, a grace period of 1 year is foreseen. At proposal stage it must only be proven that MSs/regional co-investment is requested. Upon selection, the grant will be signed after the corresponding MS/regional contribution is made available.

The draft regulation mentions: *“European Digital Innovation Hubs should be allowed to receive contributions from Member States, participating third countries or public authorities within them, contributions from international bodies or institutions, contributions from the private sector, in particular from members, shareholders or partners of the European Digital Innovation Hubs, revenues generated by the European Digital Innovation Hubs’ own assets and activities, bequests, donations and contributions from individuals or funding including in the form of grants from the Programme and other Union programmes”.*

Therefore, if a hub requires more funding than the contribution of the EC and the Member State, other contributions could come from industry as described above. Industry could for instance provide equipment and software that SMEs can use during “test before invest”, or they can pay for some of the services they receive from the EDIH. What is important to take into account is that, in order to be in-line with state aid regulation, the EDIH has to pass on all the benefits they receive through the grant to their stakeholders in the form of open and accessible services.

2.3. EDIHs have a focus/expertise

The draft regulation mentions: *“European Digital Innovation Hubs will serve as access points to latest digital capacities including high performance computing (HPC), artificial intelligence, cybersecurity, as well as other existing innovative technologies such as Key Enabling Technologies, available also in fablabs or citylabs.”*

Hubs are embedded in a local economy¹³ and have as an objective to strengthen it by supporting the digital transformation of the local industry and public sector. If for instance manufacturing is important, the hub could support the companies in adopting Industry 4.0 and circular economy methods. Traditional ICT methods like simulation and supply chain integration will play an important role, and these are becoming more and more based on AI and HPC. Also by introducing digital manufacturing, cybersecurity becomes a prerequisite. This particular hub would therefore have as a focus Industry 4.0/circular economy, using AI, HPC and Cybersecurity.

Another example would be a hub in a local economy where construction is important. The potential for digitisation of the construction sector is very high, since many tasks are

¹³ “Local” should not be interpreted in a narrow geographical sense. What is meant is the “natural” scope of the EDIH.

still carried out in a manual way. The hub could work with the sector and let relevant companies test brick-laying robots or exo-skeletons, and that way introduce AI in the sector. Figure 5 shows other examples.

In general, based on the local strengths available and the future needs of the local industry or public sector, every EDIH should have or develop a dedicated focus with corresponding expertise during the lifetime of its funding. This should include one or more of the key digital technologies supported under DEP, as these are prerequisites to the digital transformation of the economy and society. Basic competences around these technologies are required, but during the Programme there will be ample opportunities to build up more in-depth knowledge through cooperation with complementary hubs and the specialist projects of Digital Europe Programme.. If ERDF is used for co-financing, the specialisation of the hub should be in line with the smart specialisation of that region. Hubs should also help companies to evaluate the environmental consequences of using digital technologies.

In case of a very low digital maturity of the companies or public sector organisations targeted by the hub, the hub should adapt its services to first deliver the basic services needed. However, the hub should also offer gradually more specialised services to their stakeholders since also they should benefit from advanced services. In any case, the focus and expertise of a hub should follow the needs of its local stakeholders.

DEP	Other Technologies	Application areas	Sector
AI, HPC, or Cybersecurity	Simulation Supply chain integration Blockchain, Advanced Materials, ...	Industry 4.0 Circular economy	Manufacturing
	Remote sensing, Photonics, Life- Science Technologies, ...	Precision farming	Agri-food
	Robotics, Simulation, ...	Exo-skeletons, Automated building	Construction
	Digital solutions for governments Blockchain, ...	Services for citizens, once- only principle	Public administration
...

Figure 5. EDIH focus

It is important that not all hubs will have the same focus, but that they complement each other across Europe and address the needs of Europe’s economy. Member States therefore need to work together with each other, their hubs and regions to get an efficient coverage of technologies and sectors. The selection process (see Section 3.2.3) will provide a mechanism to ensure such a diverse coverage. Hubs are not confined to a regional scope, they should aim at national, European or even world-wide customers.

However, they should ensure that they are a first contact point for the local industry and public sector if they want support with their digital transformation.

2.4. EDIHs are free to define their composition

The draft regulation mentions: “(4a) *European Digital Innovation Hubs shall have substantial overall autonomy to define their organisation, composition, and working methods*” and “(11b) *A consortium of legal entities may be selected as European Digital Innovation Hubs [...].*”

While EDIHs are free to define their organisation, composition, and governance structure, they should cover at least the technology side and the business development side, and be capable of doing effective outreach. They should also have appropriate links to companies and/or public sector organisations. At the core of the EDIH there is normally a research & technology organisation (RTO)¹⁴ or university lab offering technology services. They often work in collaboration with partners whose expertise lies in business development/public sector innovation or training in order to provide innovation services as well as with partners (such as for example chambers of commerce, clusters, industry associations, the Enterprise Europe Network (EEN), incubators, EIT KIC, vocational training centers or others)¹⁵. EEN could help find investors / finance providers, while a regional cluster could help companies tap into international markets. Links with incubators/accelerators might be useful to involve start-ups in the ecosystem, and industry associations to understand requirements and future needs and digital suppliers. EIT KIC or clusters could also be the basis of an EDIH, if they are willing and able to fulfil the tasks that an EDIH needs to carry out.

In order to benefit from DEP funding, the European Digital Innovation Hubs may create a consortium of legal entities; their collaboration may be governed by a consortium agreement or similar. For the moment there is no obligation to create a dedicated legal entity. An EDIH should have a local presence, but it is allowed to partner with organisations from other regions for the purpose of creating a well-balanced and effective consortium.

The services of the EDIHs should be complementary to and not replace existing (commercial) services of e.g. training suppliers or ICT companies. Through the function “Innovation ecosystem & Networking” a hub works also as a broker and matchmaker between needs of certain companies and possible suppliers. Suppliers can be involved in the “Test before invest” or “Skills and training” activities. Hubs may give preference to local SMEs as suppliers, and if these are not available, to other European SMEs, in line with their procurement rules. Such companies do not need to be part of the consortium of beneficiaries of the grant, but these could be involved through subcontracting.

There is also a role to play for large corporates. Often such companies work together with a large number of (SME) suppliers. Large corporates could therefore be involved in defining some of the services of the EDIH to make sure that local industry profits from

¹⁴ RTOs are public or private organisations that provide a range of research, development and technology services, principally to business and governments

digital transformation; a stronger local industry is beneficial to smaller and bigger companies alike. Also large corporates could make in-kind contributions to the hub, e.g. software and equipment for “test before invest”. They can also sponsor the hub further, provided that the not-for-profit objective and the neutral brokering role of the hub remains.

Another important group of the ecosystem around a hub could be creatives or artists. They could help to embed digital better in the creative sector but equally to help shape new practices of human-machine co-existence in specific industry sectors. Often lack of awareness of consequences of use of digital technologies – like fear of loss of control or of working conditions in presence of digital technology – are hindering uptake as much as lack of technological skills.

If a hub was until now only focused on industry, but in the future they would like to serve public administrations as well, they can consider including organisations dedicated to public administration and public sector innovation in their consortium.

2.5. Mechanisms for networking / collaboration

While the Digital Europe Programme foresees individual grants for the EDIHs' capacity building, a substantial amount of this funding should be used for collaboration among EDIHs and the collaboration of EDIHs with the centres and projects financed in the other Specific Objectives of Digital Europe Programme. The organisation of the collaboration will be supported through horizontal support activities; the resources for the participation of each EDIH should be covered through their individual grant.

Horizontal support activities are funded independently from the EDIH grants. They may be funded in the form of a grant through Coordination and Support Actions, or in the form of a procurement of support activities, and possibly could take the form of an “office” in Brussels. All legal entities that want to carry out these support activities are in principle eligible. At the moment, the following horizontal support activities are foreseen:

- **Guidance for hubs:** this may include guidance to set up new hubs, re-usable support tools (templates, webinars, guidelines, good practices, reusable capacities, etc.), carefully selected good practice cases, twinning programmes, etc.
- **Train the trainer:** developing ways to transfer the knowledge generated in the HPC, AI and Cybersecurity Specific Objectives to the EDIHs and vice versa, for instance by organising regular training workshops. This should allow EDIHs to diffuse this knowledge further to their own stakeholders, and ensure wide use of the capacities of Digital Europe (see also Section 1.3).
- **Community building:** this may include community building events between groups of EDIHs (geographical, similar focus, etc.), engaging with DIHs that are

not part of the European DIH network¹⁶). These activities should in particular set up links with DIHs focused on agriculture, health or public administration.

- **Matchmaking:** this may include organising matchmaking events where needs for specific competences are advertised and matching hubs may be found. Such matchmaking should be supported by a digital matchmaking marketplace.
- **Impact assessment:** this may include analysis of indicators and KPIs, developing targets, generating new knowledge to support benchmarking and policy recommendations.

These support activities should be carried out with close guidance from the EC officials responsible for the programme. The support activities will be essential for bringing together all parts of the Digital Europe Programme, and ensuring that networking and knowledge transfer will happen, as is shown in Figure 6.

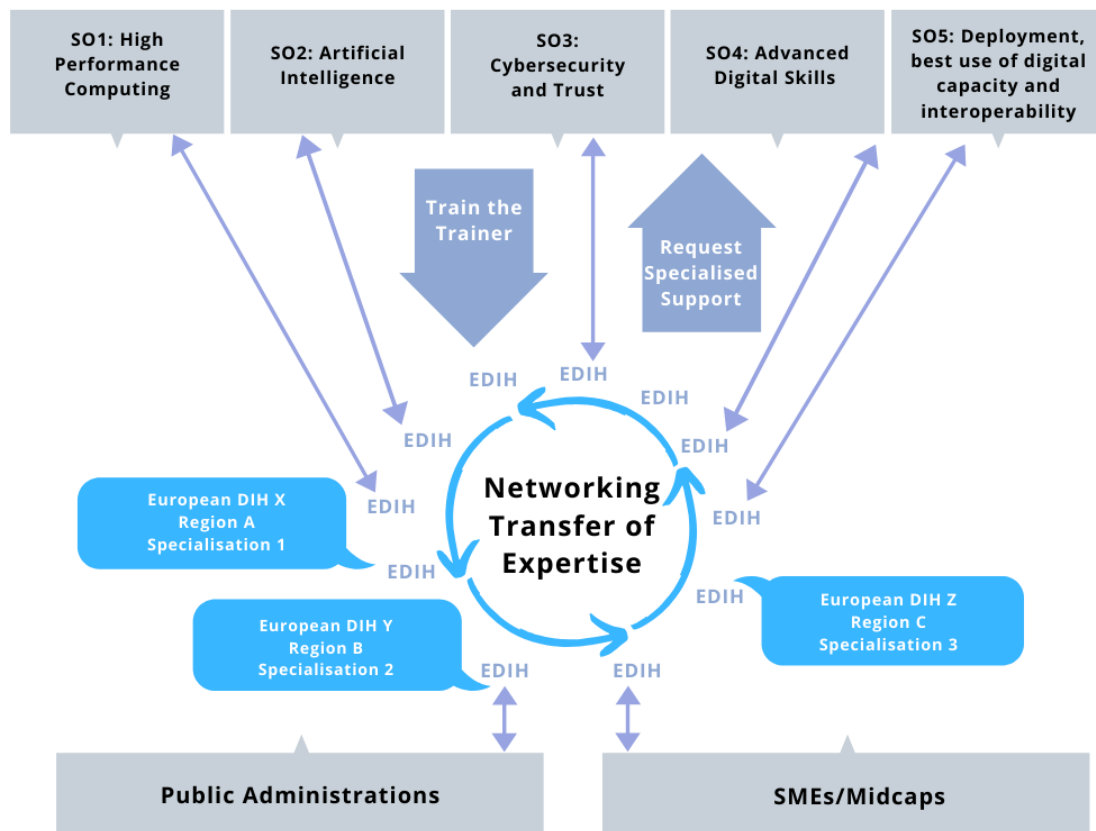


Figure 6. Schematic overview of the role of EDIHs in Digital Europe Programme

3. ACCESS TO DIGITAL EUROPE FUNDS

This chapter explains in detail how the selection process and the grant agreements will be designed.

¹⁶ The draft regulation mentions: “The European Digital Innovation Hubs should develop appropriate synergies with Digital Innovation Hubs funded by Horizon Europe or other R&I programmes, the European Institute of Innovation and Technology, in particular the EIT Digital and also with established networks such as the European Enterprise Network or the EU Invest hubs”

3.1. Grants, possibly through lump sums

The draft regulation states that “*Where European Digital Innovation Hub receives funding under this programme the funding shall be in the form of grants*”.

The grant will cover the beneficiaries’ direct and indirect eligible costs. The latter is foreseen to be 7% of the direct costs. In order to simplify the individual grants to the European DIHs, the option to use ‘lump sums’ is under consideration¹⁷.

The direct costs can cover procurement of hardware or software, depreciation of hardware or software, personnel costs of the EDIH for delivering digital transformation services to SMEs or public administrations (including subcontracting), and travel grants for hubs and local stakeholders to work with other hubs.

These costs must be shown in the proposals, via a description of costs per activity and per beneficiary. Once an activity has been reviewed and judged as successful (foreseen to happen once every 12 or 18 months through a review of the project), the corresponding costs can be claimed and will be paid to the consortium after assessment. A suitable pre-financing mechanism will be foreseen so that the hub will be sufficiently resourced at the beginning of the grant.

3.2. 2-step selection process of the hubs

Section 2.3 explains that Member States define regional coverage and aim for complementarity of the specialisations of the hubs. The text below explains how the EDIH network will be set up in the first years of the programme to reach approx. 130-260 hubs. The first step consists of designation of a list of hubs by the Member States. As a second step, all designated hubs will be invited to respond to a restricted call for proposals. If after this process there are still gaps in the coverage of the network of EDIHs, open calls may further complete the network. (Article 16 of the draft regulation: *During the first year of the implementation of the Programme, an initial network of European Digital Innovation Hubs, consisting of at least one hub per Member State, shall be established. For the purpose of the establishment of the network, each Member State shall designate, in accordance with their national procedures, administrative and institutional structures candidate entities through an open and competitive process*).

3.2.1. Expression of interest to Member States

For the initial network, the European Commission launches an Expression of Interest to Member States (foreseen in 2020¹⁸) to designate a list of candidate European Digital Innovation Hubs in their territories. These are entities (or consortia of entities), that have been selected through an open and competitive process in accordance with national

¹⁷ With lump sums, payments of the grants do not depend on the costs actually incurred. The lump sum will be paid by the Commission, if the corresponding work packages of the action have been properly implemented in accordance with Annex 1 of the grant agreement (and provided that all other obligations under the grant agreement have been complied with).

¹⁸ As soon as possible after approval of the Digital Europe Programme and the MFF

procedures, that possess the necessary competences to fulfil the functions of a EDIH, that are willing to fulfil EDIH objectives, and that are willing to submit a proposal for DEP funding. Member States (and/or regions) at the same time declare that they understand that they will co-finance the hubs (see Section 2.2) if they are selected in Digital Europe. They also declare that they have selected these entities according to an open and competitive process. In case of a transnational EDIH, serving regions in different countries, the involved Member States should together design an open and competitive process to select such a candidate EDIH. The criteria for designation of the hubs are described in Section 3.3, the “eligibility criteria”. MS may make this list longer than the number of hubs that will be funded in DEP; this will increase competition and may result in higher quality projects.

3.2.2. Restricted Call by the European Commission

Subsequently, the European Commission launches a restricted call for proposals to all the designated hubs. The draft evaluation criteria are described in Section 3.4.

As soon as the designated hubs are known, they will be briefed on the restricted call process. They will be invited to networking events, and there will be electronic means to network with other hubs, for instance through the DIH Catalogue (it is proposed that the catalogue will have the functionality to see which hubs have been designated by Member States) and through the DIHNET Community Platform. This should allow DIHs to write quality proposals, to start collaboration with other hubs, and to propose relevant collaboration ideas already in their proposals. Such initial ideas can be extended during the project’s lifetime. For DEP funding, all designated hubs have to submit a proposal before a certain deadline.

3.2.3. Evaluation process after the deadline

All proposals will be evaluated by an evaluation committee, comprising independent external experts, using the selection criteria described in Section 3.4. For the selection of evaluation experts the EC will consult the Member States.

After the technical evaluation of the proposals for a specific grant, a strategic assessment will follow where the European Commission taking into account advice of the Member States will rank all the proposals above threshold in a list based on score, geographical coverage and specialisation coverage. The European Commission will make the final selection for funding in the first year by taking from the ranked list the highest-ranking proposal from each Member State, taking into account the maximum amount of funding available¹⁹. This procedure is repeated until all the budget is allocated or until all MS have reached their share. This should result in an initial network covering the needs of industry and areas of public interest with a comprehensive and balanced geographical coverage.

To allow to fund the greatest number of EDIHs in the first year, it is considered to use “multi-annual instalments”. This is a mechanism to fund longer term projects in slices of one year, each one drawing on the foreseen budget for that year.

¹⁹ The initial network will be evenly spread over all MS, according to their foreseen ratio of EDIHs, and with a minimum of 1 EDIH per MS.

3.2.4. Extending the initial network during year 2 and 3

For all those hubs that were designated by Member States, but that were not selected after evaluation in the first year, the current intention of the Commission is to offer a second possibility to (re-) submit the proposal for the grant during the second year²⁰. The Evaluation Committee, comprising also external evaluators will in the same manner as year 1 establish a ranked list of all proposals above threshold, and the Commission and the MS will select extensions of the network in the same manner as in the first year until the budget is depleted.

The first work programme of Digital Europe will cover the first two years, 2021-2022. For year 3 there will be another work programme. If the designation of the MS and the restricted calls did not result in a full coverage of the network and there are still gaps in the network, year 3 will launch an open and competitive process to fill the gaps to reach the final network, taking into account the share of (funding for) EDIHs per Member State. In this process, the eligibility and award criteria will be the same as for year 1.

3.3. Eligibility criteria for EDIHs to be used by Member States

The Digital Europe draft regulation stipulates that each Member State shall designate, in accordance with their national procedures, administrative and institutional structures candidate entities through an open and competitive process, on the basis of the following criteria:

- a) *appropriate competences related to the functions of the European Digital Innovation Hubs specified in Article 16(5) and competences in one or several areas identified in Article 3(2);*
- b) *appropriate management capacity, staff and infrastructure necessary to carry out the functions identified in Art 16(5);*
- c) *operational and legal means to apply the administrative, contractual and financial management rules laid down at Union level;*
- d) *appropriate financial viability, corresponding to the level of Union funds it will be called upon to manage and demonstrated, where appropriate, through guarantees, issued preferably by a public authority.*

Regarding point a) the designated entity should have:

- competences to provide the following services in its focus/expertise area including an appropriate mix of AI, HPC and Cybersecurity (see Section 2.3):
 - test before invest
 - support to find investments
 - act as facilitator for training opportunities
 - support to build an innovation ecosystem and promote networking opportunities
- the ability to raise awareness of SMEs and public sector organisations on the benefits of digital transformation on a large scale in their own region.
- the willingness to collaborate with other European Digital Innovation Hubs in their country and in the EU.

²⁰ Currently it is being investigated if this is possible within the framework of the DEP regulation

Regarding point b) the designated hub may consist of one or more legal entities that bring together sufficient qualified staff, with an appropriate management capacity to provide the hub's services. Furthermore they should have (access to) a physical infrastructure (a building to receive customers, training facilities, showroom / demonstration facilities, testing and experimentation equipment and facilities) that supports the objectives of the hub.

Regarding point d) the designated entity should have a commitment of the country or region that they will co-invest in the hub's services and infrastructure, and they should be financially sound enough to manage the Union's funds.

Furthermore, to be in-line with state-aid regulations the designated hub should have a not-for-profit purpose. Having a not-for-profit purpose does not mean that the organisation does not generate profit, but in general the profits are re-invested to improve the venture. They typically serve a specific purpose, such as creating public value.

3.4. Evaluation criteria used for restricted call

The Digital Europe Regulation stipulates that *the award criteria shall be defined in the work programmes, and shall take into account at least the following elements:*

- a) *Maturity of the action in the project development;*
- b) *Soundness of the implementation plan proposed;*
- c) *The need to overcome financial obstacles such as the lack of market finance.*

The following elements shall be taken into account where applicable:

- a) *the stimulating effect of Union support on public and private investment;*
- b) *the expected economic, social, climate and environmental impact;*
- c) *accessibility and ease of access to respective services;*
- d) *a trans-European dimension;*
- e) *a balanced geographical distribution across the Union including bridging geographical digital divide, including the outermost regions;*
- f) *the presence of a long-term sustainability plan;*
- g) *the freedom for re-use and adaptation of the projects' results;*
- h) *synergy and complementarity with other Union programmes.*

The proposal is to use similar award criteria as in the CEF programme, and arrange the different evaluation elements under three criteria: 'Relevance', 'Implementation' and 'Impact', further described below. Note that these draft criteria are meant to be used throughout the whole Digital Europe Programme, and not only for the European Digital Innovation Hubs.

Relevance

- Alignment with the objectives and activities as described in the Work Programme and in the call for proposals
- Contribution to long-term policy objectives, relevant policies and strategies, and synergies with activities at European and national level
- Extent to which the proposal can overcome financial obstacles such as the lack of market finance

Implementation

- Maturity of the proposed action and efficient use of resources
- Soundness of the implementation plan
- Capacity of the applicants, and when applicable the consortium as a whole, to carry out the proposed work and mobilise the necessary resources

Impact

- Extent to which the proposal will achieve the expected impacts listed in the Work Programme
- Extent to which the proposal will strengthen competitiveness and bring important benefits for society
- Extent to which the proposal demonstrates environmental sensitivity, including for climate change issues (e.g. through sustainable use of resources and/or contribution to circular economy/ green communication to the public)

3.5. What is expected of the proposal?

Following the evaluation criteria, the proposal template will include three corresponding sections, named Relevance, Implementation and Impact. For each of the following sections we describe first in general terms what is expected in a proposal, followed by specific expectations regarding European Digital Innovation Hubs. These are marked by a yellow exclamation mark.

3.5.1. Section Relevance

- Describe the overall and specific **objectives** of the project²¹, which should be clear, measurable, realistic and achievable within the duration of the project. Objectives should be consistent with the expected impact of the project (see section Impact). Key performance indicators should be defined for various stages of the project.
- Indicate how your proposal is aligned with the objectives and activities as described in the Work Programme and in the call for proposals.
- Describe and explain the **overall concept** underpinning the project.
- Describe and explain the **overall approach**, distinguishing, as appropriate, activities indicated in the relevant section of the work programme.
- Describe the contribution of your proposal to long-term EU policy objectives, other relevant policies and strategies, and synergies with activities at European and national level.
- Describe how the proposal can overcome financial obstacles such as the lack of market finance

²¹ The term 'project' used in this template equates to the activities carried out to set up and/or operate a EDIH, and which are covered by the requested grant.

- ⚠ *Explain your focus as a European Digital Innovation Hub, e.g. the geographical scope, sector(s) and application areas you target, the technologies you cover, etc, and how this responds to demand of SMEs and/or the public sector.*
- ⚠ *Explain how you will set up and/or operate a European Digital Innovation Hub. Explain how you will build on ongoing activities and existing infrastructures, if appropriate. Explain the different activities you will carry out as a European Digital Innovation Hub.*
- ⚠ *Explain the services and competences you can offer to other hubs in the EU and under what conditions, such as test before invest; skills and training; support to find investments; innovation ecosystem and networking opportunities.*
- ⚠ *Explain how your proposal relates to other parts of the Digital Europe Programme, e.g. planned collaboration mechanisms with other European Digital Innovation Hubs and the competence / excellence centres of HPC, AI and cybersecurity or other capacities built up in the context of Digital Europe Programme.*
- ⚠ *Your proposal should be in line with main EU policy objectives, such as a Europe fit for the digital age, the European Green Deal, etc. Your proposal should support national and/or regional policy objectives, relevant smart specialisation strategies, etc.*
- ⚠ *Describe any regional, national or international activities which will be linked with the project, especially where the outputs from these will feed into the project.*
- ⚠ *Describe and explain how your proposal triggers co-investments by Member States, regional authorities, and industry. Please note that EU investments in European Digital Innovation Hubs are dependent on a minimally equal investment by Member States. Such co-financing is an eligibility criterion.*
- ⚠ *Describe and explain how your proposal would support SMEs and public administrations in overcoming financial obstacles.*

3.5.2. Section Implementation

For this section of the proposal the following elements are expected:

- A brief presentation of the overall structure of the work plan;
- Timing of the different work packages and their components (Gantt chart or similar) and a graphical presentation of the components showing how they inter-relate (Pert chart or similar);
- Detailed work description, i.e.:
 - a list of work packages;
 - a description of each work package;
 - a list of major deliverables;
 - a list of milestones;
 - a table with critical risks identified and mitigating actions;
- Use of resources:

- A table showing planned investments in hardware and software
- A table showing number of person months required;
- An explanation of subcontracting costs for involvement of subcontractors
- A table showing ‘other direct costs’ for participants where those costs exceed 15% of the personnel costs
- Describe the consortium. Indicate how the consortium matches the project’s objectives, and how it brings together the necessary expertise. Indicate how consortium members complement one another, how each member contributes to the project, and show that each has a valid role.
- Describe the capacity of the applicants, and when applicable the consortium as a whole, to carry out the proposed work and mobilise the necessary resources.

Definitions:

‘Work package’ means a major sub-division of the proposed project.

‘Deliverable’ means a distinct output of the project, meaningful in terms of the project’s overall objectives and constituted by a report, a document, a technical diagram, a software etc.

‘Milestones’ means control points in the project that help to chart progress. Milestones may correspond to the completion of a key deliverable, allowing the next phase of the work to begin. They may also be needed at intermediary points so that, if problems have arisen, corrective measures can be taken. A milestone may be a critical decision point in the project where, for example, the consortium must decide which of several technologies to adopt for further development.

3.5.3. Section Impact

- Describe how your project will contribute to each of the expected impacts mentioned in the work programme, under the relevant topic. Describe the proposed measures to achieve the expected impacts and show how those measures will help to achieve the expected impacts. Include sufficient communication and outreach measures.
- Describe how the proposal will strengthen competitiveness and bring important benefits for society
- Describe the extent to which your proposal demonstrates environmental sensitivity, including for climate change issues (e.g. through sustainable use of resources and/or contribution to circular economy/ green communication to the public)
- Describe any barriers/obstacles (such as regulation, standards, public acceptance, workforce considerations, financing of follow-up steps, cooperation with other organisations), that may determine whether and to what extent the expected impacts will be achieved. (This should not include any risk factors concerning implementation).
- Provide an **‘impact and communication plan’** that is regularly updated along the duration of your project. Describe the proposed communication and outreach measures for promoting your European Digital Innovation Hub, its services, and its results during the period of the grant. The plan should be proportionate to the scale of

the project, and should contain measures to be implemented during and after the end of the project, if applicable.

- ⚠ *Define the short, medium and long-term effects of the project.*
- ⚠ *Who are the target groups? How will the target groups benefit concretely from the project and what would change for them? How will you actively reach out to them and engage them in the activities?*
- ⚠ *Does the project aim to trigger change/innovation? If so, describe them and the degree of ambition (progress beyond the status quo)*
- ⚠ *Explain how your EDIH will contribute to achieving a well-functioning network of European Digital Innovation Hubs.*
- ⚠ *How will you involve start-ups and SME suppliers and if relevant artists/creatives to respond to the needs of the target groups?*
- ⚠ *How will you involve investors to create impact?*
- ⚠ *Wherever possible, use quantified indicators and targets.*
- ⚠ *Communication and outreach measures should be tailored to the needs of different target audiences, including groups beyond the project's own community.*
- ⚠ *Please explain how you will deal with Intellectual Property that is generated via your services, possibly together with other EDIHs, SMEs, public authorities, etc.*
- ⚠ *Please describe how your proposal would address issues related to the environment or climate change. Please indicate how your proposal would balance environmental issues and competitiveness and growth objectives.*

4. PERFORMANCE MONITORING AND INCENTIVES

All European Digital Innovation Hubs that receive a grant will be monitored on a regular basis (e.g. every 18 months) by the Commission, with the help of external experts. If Member States desire to do so, they could propose one of the experts. The EDIHs will be required to produce an activity report and a description of the extent to which they fulfil their KPI targets.

As EDIHs have similar objectives regarding supporting SMEs and/or public sector administrations in their digital transformations, all hubs are requested to use a set of common KPIs. In addition, EDIHs have additional KPIs that are specific to the particular characteristics and objectives of the hubs.

The work programme specifies a list of mandatory KPIs. A provisional list of these KPIs is listed below:

Overall outputs

- N° of SMEs and/or public administrations supported per year (through e.g. screening, training, demonstration, experimentation, business guidance, etc.). Characteristics of the organisations supported should be recorded as well, such as the sector they are active in, size of the organisation, digital maturity of the

organisation, from inside or outside the region. Such characteristics should be monitored over several years.

- Conversion rate of the SMEs/public organisations (from audit to "test before invest" to "skills and training" and "support to find investment") thanks to the EDIH
- N° of companies/public organisations using Digital Europe capacities (HPC, AI, Cybersecurity, Advanced digital skills, Digital Service Infrastructure, ...) per year thanks to the hub
- Overall impact KPIs (achieved within the SMEs/public administration supported):
 - Supported SMEs reaching higher digital intensity
 - Increased regional competitiveness
 - Effect on employment within the SMEs (digitisation can destroy jobs, and create new jobs at the same time. Description of the type of jobs lost and created.)
 - N° of successful business cases generated (or companies created)
 - Number of patents, if relevant. Software cannot be patented, but innovative usages of software in products and processes can.
 - Amount of additional investments successfully triggered (e.g. through venture capital, bank loan, etc.)
 - Nr of international activities carried out by SMEs thanks to networking of EDIHs
 - Successfully followed training courses on digital issues by personnel of the SME/public authority

Collaboration Strategy:

- N° of Collaborations with other EDIHs and stakeholders outside the region at EU level. Increase in %
- N° of Infrastructures jointly shared / joint investments. Increase in %

To facilitate understanding of the performance of EDIHs the JRC's Innovation Radar methodology (already deployed in Digital and non-digital themes of Horizon 2020, EIC Pilot as well as in DG ENV's LIFE programme) may be used. Moreover, use of common methodology across the portfolio of EDIHs opens up the opportunity for their relative performance to be assessed and understood. The Innovation Radar is particularly well-placed to assess performance of "Test before invest" and "Support to find investments" services of EDIHs. Examples of relevant indicators delivered by the proven Innovation Radar methodology include:

- the innovative capacity of EU-funded beneficiaries ("Innovative Capacity Indicator");
- the market maturity of innovations ("Market Maturity Indicator");
- the market creation potential of any given innovation ("Market Creation Potential Indicator")

5. CONCLUSIONS: EUROPEAN ADDED VALUE FOR SUPPORTING HUBS IN DIGITAL EUROPE

Through the co-investments in hubs by Member States and Digital Europe Programme important synergies between the two sources of investment will be reached, as summarised in Figure 7. Apart from the advantages provided in Figure 7, investing in hubs at EU level will also contribute to completing the Digital Single Market; hubs can help implement interoperability, standards, and EU-wide digital administrative solutions that create a business-friendly environment for SMEs to easily access new markets.

Innovations in one country often build on knowledge that was created elsewhere. The network of European Digital Innovation Hubs promote knowledge diffusion and technology spill-over. The expected knowledge spill-overs between advanced and less advanced countries will be a strong force underlying cross-country convergence, benefitting both sides, and creating a stronger Single Market as a recent study showed²², and reducing the digital divide.

Furthermore, EU investments will be a leverage factor to upscale and network EDIHs and provide a meaningful contribution to the current gap in private investment in digitalisation. Digital Europe Programme will also allow Member States, Regions and the EU to co-invest jointly in the same hubs, thus stimulating pooling of resources.

Local added value	European added value
Hub will improve competitiveness of local economy by stimulating digital transformation	Hubs will improve their offer by acquiring new knowledge and capacities through their participation in Digital Europe on HPC, AI, Cybersecurity, Advanced digital skills and public sector solutions
Hub has specialisation which is based on local strengths and addresses local needs	Networking of the hubs will stimulate knowledge transfer between hubs and rationalisation of investments because facilities are opened up for use outside the local boundaries. It reduces duplication and optimises investments in infrastructure
Hub is near their customers and they speak the same language	Hubs will learn from other hubs by sharing best practices, and by collaboration of hubs in case of missing expertise/facilities.
	The hub network will be a means to promote excellence developed locally to other regions in Europe; it will open new markets for the companies involved in the innovations

Figure 7. Added value of combining local and European investments

²² <https://www.bertelsmann-stiftung.de/en/topics/latest-news/2019/may/eu-single-market-boosts-per-capita-incomes-by-almost-1000-euros-a-year/>

6. ANNEXES

6.1. The current landscape of Digital Innovation Hubs

6.1.1. Innovation experiments in Horizon 2020

The Digitising European Industry Strategy identified Digital Innovation Hubs (DIHs) as a key mechanism to help the digital transformation of companies. Between 2016 and 2020 the EU is investing €100 million per year, through H2020, to support DIHs across Europe that help SMEs and mid-caps go digital. Through initiatives such as ICT Innovation for Manufacturing SMES (I4MS) and Smart Anything Everywhere (SAE), more than 150 DIHs and 500 Start-ups, SMEs and mid-caps have taken part so far in 370 different innovation experiments where companies tested digital innovations in collaboration with DIHs.

By 2020, approximately 2000 innovative SMEs across Europe will have received this kind of support from the EU. As a result of this EU funding technically tested prototypes, replicable experiments, solutions and significant experience have been generated that DIHs could benefit from. This provides a solid basis for further developing the network of DIHs.

6.1.2. Digital Innovation Hubs across the EU

As part of their digitisation strategies, around 15 Member States are implementing national DIH strategies, e.g. Mittelstand 4.0 in Germany, Smart Industry Field Labs in the Netherlands, or the Italian Piano Nazionale Industria 4.0. The starting point, structure and focus of the DIHs vary across the EU; depending on the national or regional strengths, identified in the respective Smart Specialisation Strategies, or national/regional digitisation initiatives.

Despite the diverse nature of DIHs, a DIH catalogue – "yellow pages" – was put in place and monitors the development of DIHs across Europe. Following a bottom-up approach, organisations that comply with a set of basic criteria, may feature in this catalogue. The purpose of the catalogue is to support community building. Organisations registered in the catalogue will be invited to stakeholder meetings. Being in the catalogue is never a pre-requisite for funding.

6.1.3. Covering white spots and expanding the network

The EU aims to ensure that all companies would have a DIH at working distance; our objective is to have at least one DIH (as a proxy), in every region by 2020. There are however, still many white spots across the EU, especially in Central and Eastern Europe. To bridge this gap, the EU is supporting the creation of new DIHs in those regions through several actions. The project 'Smart Factories in new EU Member States' provided training to 34 potential DIHs in the EU13. The current 'DIHELP' project is helping another 30 DIHs from 17 countries in regions across Europe that do not have a digitalisation programme yet and where industry capacity needs to be improved. In addition, a call of €8 million of the Horizon 2020 programme both in 2019 and in 2020 respectively, will support DIHs and SMEs in regions so far underrepresented. The various networking and collaboration activities also help DIHs from these regions to engage with other DIHs by actively participating in the different DIH workshops,

networks of the different Coordination and Support Actions (CSAs) and the recently launched DIHNET Community platform.

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