EUROPEAN COMMISSION
DIRECTORATE-GENERAL FOR COMMUNICATIONS NETWORKS, CONTENT AND TECHNOLOGY

Artificial Intelligence and Digital Industry
**Technologies and Systems for Digitising Industry**

# European Digital Innovation Hubs in Digital Europe Programme

## Draft working document

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 2 meetings with Member State representatives where some of these ideas where discussed. The views expressed in this version are for further discussion with the Member States. 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, HPC and Cybersecurity as well as other digital technologies by industry (in particular SMEs and midcaps) and public sector organisations in Europe, see Figure 1. 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 as well, 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, 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 will be essential in the selection process of Digital Europe; 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 will be shared with the informal Expert Group on Digital Europe, and the Digitising European Industry working group on Digital Innovation Hubs in order to reach a consensus on all details related to the selection process of the hubs. Member States may use the final version of this document to prepare their selection process in order to designate a list of hub to the European Commission. It is expected that they should provide this list to the EU in the second half of 2020. The European Commission may use the final version of this document 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.


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

# Table of Contents


1. CONTEXT ..... 5

1.1. Further need for digital transformation ..... 5

1.2. What is a European Digital Innovation Hub? ..... 6

1.3. Digital Europe Programme knowledge transfer mechanisms ..... 7

1.4. EDIHs to roll-out digital service infrastructures (DSIs) and interoperability solutions ..... 8

1.5. Foreseen use cases for networking of EDIHs ..... 9

1.6. Relationship with other programmes ..... 10

2. IMPLEMENTATION OF EUROPEAN DIGITAL INNOVATION HUBS ..... 12

2.1. Size of the network of European Digital Innovation Hubs ..... 12

2.2. Co-investment principles ..... 14

2.3. EDIHs have a focus/expertise ..... 15

2.4. EDIHs are free to define their composition ..... 17

2.5. Mechanisms for networking / collaboration ..... 18

3. ACCESS TO DIGITAL EUROPE FUNDS ..... 19

3.1. Grants through lump sums ..... 19

3.2. 2-step selection process of the hubs ..... 20

3.2.1. Expression of interest to Member States ..... 20

**3.2.2.** Restricted Call by the European Commission ..... 20

3.2.3. Preparation of designated hubs for the restricted call ..... 21

3.2.4. Evaluation process after the deadline ..... 21

3.2.5. Extending the initial network during year 2 and 3 ..... 22

3.3. Eligibility criteria for EDIHs to be used by Member States ..... 22

3.4. Evaluation criteria used for restricted call ..... 23

4. PERFORMANCE MONITORING AND INCENTIVES ..... 25

5. CONCLUSIONS: EUROPEAN ADDED VALUE FOR SUPPORTING HUBS IN DIGITAL EUROPE ..... 26

6. ANNEXES ..... 27

6.1. The current landscape of Digital Innovation Hubs ..... 27

6.1.1. Innovation experiments in Horizon 2020 ..... 27

6.1.2. Digital Innovation Hubs across the EU ..... 28

6.1.3. Covering white spots and expanding the network ..... 28

6.2. State aid considerations ..... 28

# Table of Figures

Figure 1. Digital Europe for Digital Innovation Hubs at a glance ..... 2
Figure 2. Level of digitalisation and adoption of eGovernment ..... 5
Figure 3. Main functions of European Digital Innovation Hubs ..... 7
Figure 4. The programmes complement each other ..... 12
Figure 5. Projected number of hubs per MS ..... 14
Figure 6. EDIH focus ..... 16
Figure 7. Schematic overview of the role of EDIHs in Digital Europe Programme ..... 19
Figure 8. Added value of combining local and European investments ..... 27

# 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, services to fully benefit from the efficiency gains and innovation it 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.

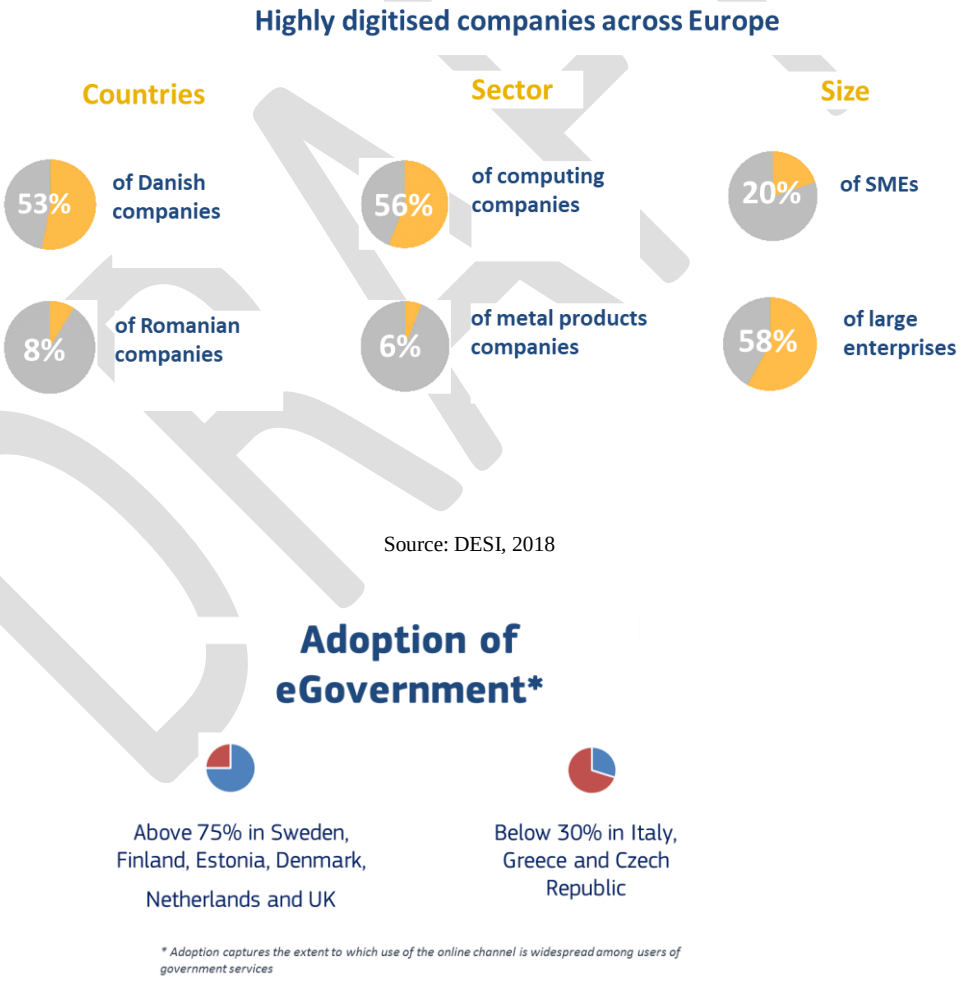


*Figure 2. Level of digitalisation and adoption of eGovernment*

### 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 objective 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: understanding business opportunities, supporting the preparation of business and financial models, access to financial institutions and investors, supporting the use of InvestEU and other relevant financing mechanisms, in close co-operation with the InvestEU Advisory Hub and the Enterprise Europe Network (EEN). For the public sector in particular, as one of the largest purchasers of IT, this service could furthermore provide support to leverage the purchasing power of the public sector, transforming it into a large innovation buyer.
- **Innovation ecosystem and networking opportunities**: 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,

[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;

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 prototypes. EDIHs should play this brokering role and bring e.g. end-users and potential suppliers of technological solutions into contact with each other for 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, chambers of commerce will greatly help the brokering function.

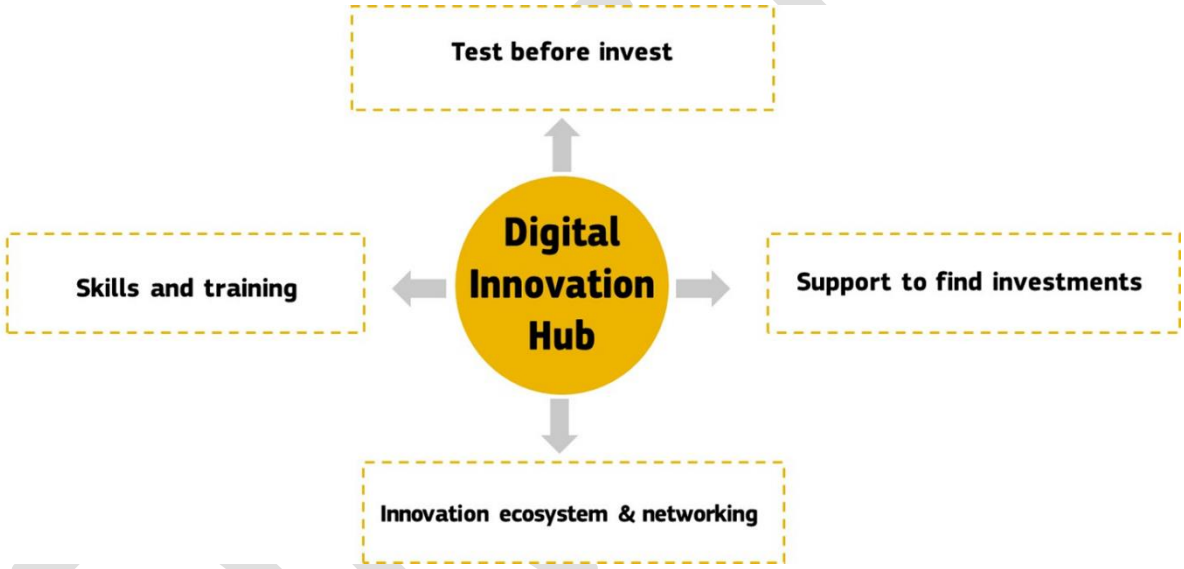


*Figure 3. Main functions of European Digital Innovation Hubs*

### 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 Pillars 1, 2 and 3 will be made available by HPC Competence Centres, Cybersecurity National Coordination Centres, and AI Reference sites. Pillar 4 will create an offer of trainings and job placements available for the different target groups. Pillar 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. They can

also promote the AI-on-demand platform. This will be an important project in the AI pillar of DEP, 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 made available through the Cybersecurity pillar. Here also, the EDIHs should promote this to their stakeholders. For the skills pillar, 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. Regarding job placements, the EDIHs will promote these to their network of SMEs / public administrations and will encourage organisations in their territorial catchment area to publish their offers. Section 1.4 describes in more detail some examples of EDIH activities for the public sector.

To support the necessary knowledge transfer it is foreseen in Digital Europe Programme to have a horizontal support activity (see Section0) that will organise on a regular basis e.g. a hands-on training where specialist centres or consortia active in the relevant dedicated DEP projects will brief the EDIHs on the latest developments in HPC, AI, Cybersecurity, Advanced digital skills or the Public Sector Interoperability solutions. They will train the hubs on how these capacities may be used by SMEs and public administrations. The hubs will then also provide user-feedback from their customers. The dedicated projects can use this input to update their products and services and to start the development of new solutions.
Such "train-the-trainer" sessions will enable hubs that do not have experience yet with one of the topics of Digital Europe Programme can build up the necessary competences to transfer all or some of these technologies to their stakeholders. Through their respective grants, both dedicated projects and the hubs commit to participate in the train-the-trainer events.

### 1.4. EDIHs to roll-out 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)[2], as well as the Open Data Platform, which can serve both the public and the private sector. This is the basis for an open European data and digital space, much of it enabled by services in federated clouds.

EDIHs will serve local and regional public administrations and other public sector organisations that aspire to use the Transition Platform Ecosystem, to be compliant with the Principles of the Tallinn declaration on E-Government[3]. Furthermore, EDIHs will 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 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. Other hubs can, if they find it beneficial, develop this expertise through the train-the-trainer activities in DEP, and learn from other hubs how they approach public sector organisations. 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 research institutions dedicated to public administration and public sector innovation in their consortium.

### 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 country, to export a DIH's excellence, and to connect ecosystems.

- Exporting / Importing EDIH excellence (EDIH-SME-EDIH): 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 (SMEs-DIH-DIH-SMEs): 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

[2] https://ec.europa.eu/cefdigital/wiki/display/EHOPERATIONS/eHealth+DSI+Operations+Home

[3] https://ec.europa.eu/digital-single-market/en/news/ministerial-declaration-egovernment-tallinn-declaration

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.

- 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 are available on the Smart Specialisation Platform for Industrial Modernisation[4]. They are based on the Vanguard Initiative[5] 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. European Digital Innovation Hubs could be a linking pin to make use of the different investments in a consistent manner (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 directly, 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 done together with the Member States, and the objective is to get a geographically balanced network of EDIHs.

**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. All the organisations that are participating in the test-before-invest experiments will be eligible for funding. European Digital Innovation Hubs may participate to these projects, but also 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 hubs, hubs to buy equipment, infrastructure, software, deliver services to SMEs and public sector, etc. The objectives of these hubs should 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

[4] https://s3platform.jrc.ec.europa.eu/industrial-modernisation

[5] https://s3vanguardinitiative.eu/

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 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 that are used for planning of the shared management funds such as ERDF.
New in the future ERDF programme is that interregional investments are encouraged through a new Interregional Innovation Investment Instrument. Therefore several regions or Member States may also decide to invest together in Digital Innovation Hubs.

One of the synergies between ERDF and Digital Europe Programme foresees to combine these two programmes for European Digital Innovation Hubs[6]. It will be possible to use ERDF for the investments that is expected to be done by the Member States or their regions, because this synergy will introduce a benefit to the whole of Europe[7]. 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 hubs funded through interregional investments. Also these type of investments may be complemented by Digital Europe.

**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 a 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 that often exists between financial intermediaries and companies: from the side of financial intermediaries it is difficult to estimate the risks associated with investments in digital and to find the companies in need of investments, and from the side of companies it is difficult to present a clear plan to the investors which explains 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.

[6] Section 2.2 will explain the co-investment principles for EDIHs: it is foreseen that both the Member State and the European Commission finance the hub, each one for 50%.

[7] 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. It 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, or between 7 and 14M€ during the 7 years programme.

For the geographical distribution, it is proposed to leave maximum flexibility to the Member States. They get the responsibility 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.

To make this operational, depending on the final budget of the Digital Europe Programme, an average co-funding per country may be calculated based on the fraction of seats every country has in the European Parliament (as of 2019)[8]. Assuming that the current proposed budget for Digital Europe will be confirmed it is foreseen that every Member State can designate an amount of hubs that is in the range given by the Minimum and Maximum number of hubs of Figure 5. The EC funding for the grant each of these hubs could request should be between 3,5 M€ and 7M€ for the 7 years of the programme, and the sum of this EC funding should not be more than the "Projected budget" provided in the table. Provided that Member States invest a similar amount, this means that the size of the network of EDIHs will be between 129 and 257, as can be seen from Figure 5.

| | | NUTS-2 | | Population | % EP seats 2019 | Projected budget (1000 €) | Min # of hubs | Max # of hubs |
|---|---|---|---|---|---|---|---|---|
| BE | Belgium | Provincies / Provinces | 11 | 11,351,727 | 21 | 26,809 | 4 | 8 |
| BG | Bulgaria | Райони (Rajoni) | 6 | 7,101,859 | 17 | 21,702 | 3 | 6 |
| CZ | Czech Republic | Regiony soudržnosti | 8 | 10,578,820 | 21 | 26,809 | 4 | 8 |
| DK | Denmark | Regioner | 5 | 5,748,769 | 14 | 17,872 | 3 | 5 |
| DE | Germany | Regierungsbezirke | 38 | 82,521,653 | 96 | 122,553 | 18 | 35 |
| EE | Estonia | - | 1 | 1,315,635 | 7 | 8,936 | 1 | 3 |
| IE | Ireland | Regions | 3 | 4,784,383 | 13 | 16,596 | 2 | 5 |
| EL | Greece | Περιφέρειες (Periferies - Regions) | 13 | 10,768,193 | 21 | 26,809 | 4 | 8 |
| ES | Spain | Comunidades y ciudades Autónomas | 19 | 46,528,966 | 59 | 75,319 | 11 | 22 |
| FR | France | Régions + DOM | 27 | 66,989,083 | 79 | 100,851 | 14 | 29 |
| HR | Croatia | Regija | 2 | 4,154,213 | 12 | 15,319 | 2 | 4 |
| IT | Italy | Regioni | 21 | 60,589,445 | 76 | 97,021 | 14 | 28 |
| CY | Cyprus | - | 1 | 854,802 | 6 | 7,660 | 1 | 2 |
| LV | Latvia | - | 1 | 1,950,116 | 8 | 10,213 | 1 | 3 |

[8] For a while there has been the idea to make a distribution based on number of NUTS 2 regions, but NUTS 2 regions in Europe are very different. For instance in Spain, the largest NUTS 2 region is Andalusia, with 8,4 Million inhabitants, and the smallest one is La Rioja, with only 313000 inhabitants.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| LT | Lithuania | Regionai | 2 | 2,847,904 | 11 | 14,043 | 2 | 4 |
| LU | Luxembourg | - | 1 | 590,667 | 6 | 7,660 | 1 | 2 |
| HU | Hungary | Tervezési-statisztikai régiók | 8 | 9,797,561 | 21 | 26,809 | 4 | 8 |
| MT | Malta | - | 1 | 460,297 | 6 | 7,660 | 1 | 2 |
| NL | Netherlands | Provincies | 12 | 17,081,507 | 29 | 37,021 | 5 | 11 |
| AT | Austria | Bundesländer | 9 | 8,772,865 | 19 | 24,255 | 3 | 7 |
| PL | Poland | Regiony | 17 | 37,972,964 | 52 | 66,383 | 9 | 19 |
| PT | Portugal | Grupos de Entidades Intermunicipais + Regiões Autónomas | 7 | 10,309,573 | 21 | 26,809 | 4 | 8 |
| RO | Romania | Regiuni | 8 | 19,644,350 | 33 | 42,128 | 6 | 12 |
| SI | Slovenia | Kohezijske regije | 2 | 2,065,895 | 8 | 10,213 | 1 | 3 |
| SK | Slovakia | Oblasti | 4 | 5,435,343 | 14 | 17,872 | 3 | 5 |
| FI | Finland | Suuralueet / Storområden | 5 | 5,503,297 | 14 | 17,872 | 3 | 5 |
| SE | Sweden | Riksområden | 8 | 9,995,153 | 21 | 26,809 | 4 | 8 |
| UK | United Kingdom | Counties (some grouped); Inner and Outer London; Groups of unitary authorities | 41 | 65,808,573 | 0 | 0,000 | 0 | 0 |
| EU-28 | | | **281** | | 705 | 900,000 | 129 | 257 |

*Figure 5. Projected number of hubs per MS*

## 2.2. Co-investment principles

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

Member States and the European Commission will both invest in the European Digital Innovation Hubs. Digital Europe Programme foresees funding in the form of a grant, for

the duration of 7 years. The final objective is that the hub becomes sustainable, and will continue to operate after the Digital Europe Programme ends.

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

- Equipment and facilities, both hardware and software
- Human resources of the EDIH for delivering digital transformation services to SMEs or public administrations, also for cross border situations
- Travel grants for hubs 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. MS (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:

- 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 on the condition that the 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. EDIHs have to decide what they offer as free or as paid services, but they cannot be double funded for their services, in order to be in-line with state aid regulation.

### 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 economy and have as an objective to strengthen it by supporting the digital transformation of the industry and public sector. If for instance manufacturing is important, the hub should support the companies in adopting Industry 4.0 and circular production 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 production, 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 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 6 shows other examples.

In general, based on the local strengths available and the future needs of the industry or public sector, every EDIH should have or develop a focus of expertise during the lifetime of their 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 in Europe, for instance through the train-the-trainer mechanisms described in Section 1.3. 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.

| DEP | Other Technologies | Application areas | Sector |
|---|---|---|---|
| AI, HPC, or Cybersecurity | Simulation<br>Supply chain integration | Industry 4.0<br>Circular economy | Manufacturing |
| | Remote sensing | Precision farming | Agri-food |
| | Robotics, Simulation | Exo-skeletons,<br>Automated building | Construction |
| | Digital solutions for governments, AI, Cybersecurity | Services for citizens, once only principle | Public administration |
| | … | … | … |

*Figure 6. 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. 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 following the provision in Article 197.2(c) of the Financial Regulation that allows entities which do not have legal personality under the applicable national law to participate in calls for proposals, provided that their representatives have the capacity to undertake legal obligations on behalf of the entities and that the entities offer guarantees for the protection of the financial interests of the Union equivalent to those offered by legal persons.*"

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)[9] 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, incubators, EIT KIC or others)[10]. 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. EIT KIC or clusters could even 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. An EDIH should have a local presence, they are however allowed to partner with organisations from other regions for the purpose of creating a well-balanced and effective consortium.

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

[10] The draft regulation mentions: "(11aa) 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 Entreprise Network or the EU Invest hubs."

### 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 pillars of Digital Europe Programme. The organisation of the collaboration will be managed through horizontal support activities; the resources for the participation of each EDIH should be covered through their individual grant.

The full range of funding instruments are at disposal to carry out the horizontal support activities (eg in the form of a grant through Coordination and Support Actions, or in the form of a procurement of support activities). All legal entities that want to carry out these support activities are in principle eligible. 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 any EDIH may use, such as AI-on-demand platform, Fortissimo/Cloudifactoring marketplace, etc.), identifying carefully selected good practice cases and incentivising those (e.g. through awards), twinning programmes, etc..
- **Train the trainer:** developing ways to transfer the knowledge generated in the HPC, AI and Cyber Security pillars 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 network[11]). 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 where demands may be published, several offers appear, possibility to discuss with them, select the match), alongside profiles of EDIHs (including capabilities, business models and other useful material such as contracts).
- **Impact assessment**: this may include analysis of indicators and KPIs, developing targets, generating new knowledge to support bench-marking and policy recommendations.

These support activities should be carried out in close collaboration with the EC officials responsible for the programme. They will be essential for bringing together all parts of the Digital Europe Programme, and ensure that networking and knowledge transfer will happen, as is shown in Figure 7.

[11] 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 Entreprise Network or the EU Invest hubs"

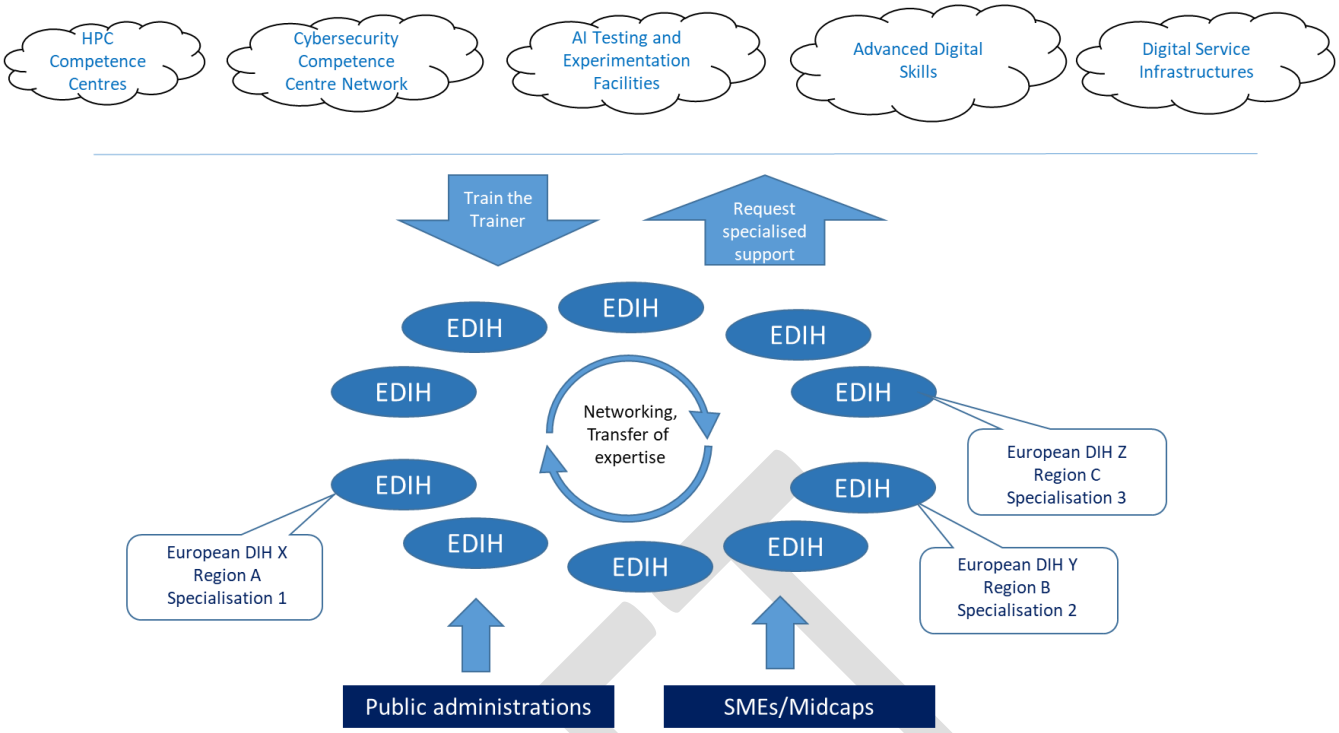


*Figure 7. Schematic overview of the role of EDIHs in Digital Europe Programme*

# 3. ACCESS TO DIGITAL EUROPE FUNDS

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

## 3.1. Grants 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*".

In order to simplify the individual grants to the European DIHs, it is foreseen that the Commission will use 'lump sums'. This lump sum will cover the beneficiaries' direct and indirect eligible costs. The latter is foreseen to be 7% of the direct costs.

The direct costs can cover procurement of hardware or software, depreciation of hardware or software, human resources of the EDIH for delivering digital transformation services to SMEs or public administrations, also for cross border situations 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 with external evaluators), the corresponding costs will be paid to the consortium. A suitable pre-financing mechanism will be foreseen so that the hub will be sufficiently resourced at the beginning of the grant.
Special attention needs to be paid for the part of the budget related to a procurement of new hardware or software. The workprogramme would need to specify quality standards

towards which these procurements need to comply, which should at the same time be verifiable by external experts during a review.

The check whether the proposed lump sum in the proposal is appropriate for the work to be carried out, needs to be done during the evaluation process by the external experts. If they judge (part of) the lumpsum to be too high, the European Commission will have the right to lower the EC contribution of the grant, to avoid excessive funding.

### 3.2. 2-step selection process of the hubs

Section 2.3 already explained that Member States define regional coverage and stir complementarity of the specialisations of the hubs. The text below explains how the EDIH network will be set-up in the first 3 years of the programme, by adding each year about one third of the total number (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, an open call may 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 202012) 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 procedures and that possess the necessary competences to fulfil the functions of a hub. 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. The criteria for designation of the hubs are described in Section 3.3, the “eligibility criteria”.

#### ***3.2.2.*** *Restricted Call by the European Commission*

Subsequently, the European Commission launches a restricted call for proposals. The call will ask for a Financial Framework Partnership Agreement[13] as well. This will be used in order to facilitate:

- Long term funding of the hubs (the aim is to fund hubs for 7 years, provided that they function well).

[12] As soon as possible after approval of the Digital Europe Programme and the MFF

[13] Article 130 of the Financial Regulation: " *The Commission may establish financial framework partnership agreements for a long-term cooperation with persons and entities implementing Union funds*. [They] *shall specify the forms of financial cooperation and shall include an obligation to set out, in the specific agreements signed under the financial framework partnership agreement, arrangements for monitoring the achievement of specific objectives*".

- Awarding specific grants to hubs designated by Member States in year 2 or 3. This would be the case for those hubs that have passed the quality thresholds but cannot be funded in the first year due to lack of budget.
- For all those designated hubs that are not ready yet in the first year to pass the quality threshold to get a second opportunity in year 2 to propose their specific grant. This would require the hub to pass the thresholds for the Framework Partnership though.

For all these reasons, the designated hubs will be asked to submit proposals for specific grants together with the proposal for the framework partnership, if they are ready to do so. If they need more time, they can apply only for the framework agreement. The specific grant would allow to request funding for three years

Only one FPA would needed to be signed with all potential EDIHs that passed the threshold for the FPA. The duration of an FPA is normally 4 years. It therefore provides the opportunity to call for a second specific grant in year 4 of the programme for all those EDIHs that have successfully carried out their first specific grant of 3 years. However, the FPA might need to be extended for EDIHs that started later, e.g. in year 2 or 3. This is possible in duly justified cases through the Annual Activity Reporting process of the European Commission.

#### *3.2.3. Preparation of designated hubs for the restricted call*

As soon as the designated hubs are known, they will be briefed on the restricted call process. It is important that all designated hubs understand that they will have only one opportunity to apply for the Framework Partnership Agreement, and only two opportunities for the specific grants. If they fail this, they will lose their special status and can only become EDIH by applying to an open and competitive call in year 3 or later.

The designated hubs 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 and to start collaboration with other hubs and to propose relevant collaboration ideas already in the proposal. These are initial ideas that can be extended during the project's lifetime. All designated hubs have to submit a proposal for an FPA and for a specific grant before a certain deadline. It is compulsory to submit the FPA proposal, but it would be possible to wait with the proposal for the specific grant until year 2 if the designated hub is not ready yet.

#### *3.2.4. Evaluation process after the deadline*

All proposals (for Framework Partnership and Specific Grant Agreements) will be evaluated by independent experts, using the selection criteria described in Section 3.4. For the nomination of experts the EC will consult the member states, and some of the experts may be proposed by each Member State. All proposals for a FPA that pass the quality threshold will be selected for concluding the Framework Partnership Agreement.

After the technical evaluation of the proposals for a specific grant, a strategic evaluation will follow where the European Commission together with 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 agreed ranked list the highest-ranking proposal from each Member State, taking into account the maximum amount of funding available[14] This procedure is repeated until all the budget is allocated or until all MS have reached their threshold. If the latter is the case, starting again from the highest ranking not yet selected proposals, additional hubs will be selected in a geographically balanced manner until all budget is allocated. This should result in an initial network covering the needs of industry and areas of public interest with a comprehensive and balanced geographical coverage, improving convergence between cohesion countries and the other Member States.

If there are still proposals that have passed the threshold but could not be selected for the first year due to lack of budget they will get a contract offered in year 2, using the available budget of year 2. If then there are still proposals left above threshold, the list for year 3 will also be established.

#### *3.2.5. Extending the initial network during year 2 and 3*

For all those hubs that have concluded a Framework Partnership Agreement contract, but that did not pass the quality thresholds of the specific grant, there will be the possibility during year 2 to (re-)submit the proposal for the specific grant. 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, starting from all the projects that were still waiting from year 1 (if any). Remaining proposals above the threshold will be added to the list of year 3 according to the same selection process.

The first workprogramme of Digital Europe will cover the first two years. For year 3 there will be another workprogramme. The call for the EDIHs will first fund all those hubs that are waiting for the funding of year 3 (if there any). But if the designation of the MS did not result in a full coverage of the network and there are still gaps in the network, year 3 will also launch an open and competitive process to fill the gaps to reach the final network, calling at the same time for Framework Partnership and specific grant agreement. In this process, the eligibility and award criteria will be the same.
Every hub should in principle be funded for 7 years, the duration of the programme (financial commitments will be made in a such a way that even hubs selected in year 3 would still be funded, if judged eligible, for 7 years). The initial grant might have a shorter duration, e.g. 3 years, but if the hub is functioning well (to be determined during a review), they will be invited for a restricted call to renew the grant for the remaining years. For the hubs of the first year, this restricted call needs to happen in year 4 of the Programme.

### 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:

[14] 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.

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.

Regarding point b) the designated hub may consist of one or more legal entities that bring together sufficient 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 focus 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. Being a non-profit 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', 'Quality and efficiency of the implementation' and 'Impact', further described below:

**Relevance**

- Alignment with the objectives and activities required for European Digital Innovation Hubs
- The usefulness and ease of access of the proposed services of the hub for regional and European public and private organisations
- Presence of lack of market finance for supporting the digital transformation of the target groups of the European Digital Innovation Hub
- The willingness and capability of the EDIH to learn and strengthen their capacity in both technology transfer and also in HPC, AI, Cybersecurity, Advanced Digital Skills and public sector solutions
- The EDIH' preliminary plans to establish collaboration with other hubs
- Level of ambition with regard to number of SMEs / public administrations screened, number of SMEs / public administrations 'served' locally and cross-border
- Alignment and synergies with EU long-term policy objectives, relevant policies, strategies and activities at European and national level.

**Quality and efficiency of the implementation**

- Maturity of the proposed solution (e.g. in terms of experience, history, track record or if this is a starting EDIH their plans to build up such maturity)
- Coherence and effectiveness of the work plan, including appropriateness of the allocation of tasks and resources.
- Quality and relevant experience of the individual participants and, if more than one beneficiary, of the consortium as a whole (including complementarity, balance).
- Extent to which the proposal demonstrates support from national authorities and industry. Appropriateness of co-investments of MS/regions.
- Appropriate attention to security, privacy, inclusiveness and accessibility (when relevant).

**Impact**

- The expected economic, social, climate and environmental impact
- Quality of the approach to trigger further investments by the SMEs or public sector organisations supported.
- Quality of the approach to build an ecosystem supporting value chains
- Quality of the approach to innovation and IPR management

Both the Framework Partnership Agreement and the Specific Agreement would need to use these award criteria. It is proposed to only use the first bullet point for the FPA, and all bullet points for the Specific Agreement.

## 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, and if desired the Member State with the help of external experts. The EDIHs will be required to produce an activity report and a description of the extent to which they fulfil their KPIs.

As there is a great variety in hubs and organisations to be supported, hubs will be asked to identify their own specific KPIs, related (for example) to the (i) number of companies and/or public administrations supported (screening, training, demonstration, experimentation, business guidance[15]); (ii) the number of those deciding to invest their own money in the digital solution, and how much is invested; (iii) number of cross-border collaborations (iv) growth of digital maturity of companies and public sector organisations over the years.

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")

The idea is to specify in the workprogramme a list of possible KPI's from which they can choose the relevant ones for their hub. A provisional list of possible KPIs is listed below:

**Overall outputs**

- Nº 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 EDIH (from audit to taking the digital transformation) thanks to Digital Europe

[15] This indicator is also mentioned in the draft regulation Section 5.4 *"Number of businesses and public sector entities which have used the European Digital Innovation Hubs' services"*

- Nº of companies/public organisations using Digital Europe capacities per year thanks to the hub
- Overall impact KPIs (achieved within the SMEs supported):
    - Supported SMEs reaching higher digital intensity
    - Increased regional competitiveness
    - Nº of employment created in the SMEs
    - Nº of successful business cases generated (or companies created)
    - Number of patents
    - Amount of additional investments successfully triggered (e.g. through venture capital, bank loan, etc.)

**Collaboration Strategy:**

- Nº of Collaboration with other EDIHs and stakeholders outside the region at EU level. Increase in %
- Nº of Infrastructures jointly shared / joint investments. Increase in %
- Skills development strategy for SMEs
- Nº of specific training programmes launched by the EDIH. Increase in %

## 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 8.

Apart from the advantages provided in Figure 8, Investing in hubs at EU level will also contribute to completing the Digital Single Market; hubs can help implement interoperability, standards, 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 by innovations in another country[16]. Such knowledge diffusion and technology spill-over is promoted by the network of European Digital Innovation Hubs. 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 studied showed[17], and reducing a digital divide.

Furthermore, EU investment 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.

[16] Knowledge spillover, Innovation and Growth, Aghion, P., Jaravel, X. (2015)

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

| 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 8. Added value of combining local and European investments*

# 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 will invest €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, more than 10 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.

### 6.2. State aid considerations

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, there are state aid considerations, since 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[18].

[18] any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall, in so far as it affects trade between Member States, be incompatible with the internal market (Article 107 (1) TFEU)

For all cases described below, the funding of both the MS and Digital Europe Programme must be cumulated to check whether aid intensity limits of the respective State aid scheme or block exemption regulation are respected.

A different reasoning applies to non-economic and economic activities[19]. The Commission considers that the following activities are generally of a non-economic character:

- education for more and better skilled human resources
- independent R&D for more knowledge and better understanding, including collaborative R&D where the research organisation or research infrastructure engages in effective collaboration
- wide dissemination of research results on a non-exclusive and nondiscriminatory basis, for example through teaching, open-access databases, open publications or open software.
- knowledge transfer activities, where all profits from those activities are reinvested in the primary activities of the research organisation or research infrastructure.

**Rules applicable for EDIHs:**

There are a number of policy objectives for which State aid can be considered compatible with competition law. For instance, there is no State aid to EDIH (for both economic and non-economic activities)

- If they can proof there is no market for the services[20] they provide – during the whole duration of the project
- If they act as an 'intermediary' and if any advantage through public funding is quantifiable and demonstrable and is fully passed on to the final recipients (in this case to the SME or public administration, e.g. through price reduction). There should be no further advantage for the intermediary – they are selected with an open tender procedure, and customers are entitled to acquire services from any intermediary.

Another option to avoid notification is, when conditions of the General Block Exemption Regulation (GBER) are fulfilled. Especially relevant are:

- Article 26 GBER allows investment aid up to EUR 20 million for research infrastructures, representing 50% of the eligible costs (investment costs in tangible and intangible assets).
- Article 27 GBER allows investment and operating aid (max. 10 years) up to EUR 7.5 million per innovation cluster, representing maximum of 50 % of the eligible cost (running & marketing of cluster, management of facilities, organisation of training & conferences & networking and transnational cooperation).

In the absence of a block exemption, a State aid or State aid scheme must be notified to the Commission and authorised before it is put into effect. The Commission normally would examine such cases under the 2014 Framework for State aid for research.

[19] See article 2.1.1 of Framework for state aid for research and development and innovation (COM (2014) 3282)

[20] The EDIH may not distort competition by subsidising an offer that is also provided by private sector actors on the market.

**Rules applicable for SMEs or public sector organisations:**
If the EDIH is acting as an intermediary and passing on all the advantages to the beneficiaries (normally SMEs and public sector organisations) it should also be checked if that is state-aid compliant.
If the EDIH offers at least 80% non-economic activities, state aid is not present. Even the small economic activity offered for free is no aid.

In the case of services that can be considered economic activities, the simplest model for organizing support for SMEs/public sector organisations in the form of free or subsidised services in accordance with the aid rules is to use the "de minimis" rule.[21]

The de minimis aid scheme allows for aid of up to €200,000 to any business enterprise over a rolling three-year period, without approval by the EC as it is classified as a low amount that to neither affects competition nor trade between MS. It is however necessary that every organisation receiving the support reports about the amount of aid provided, so that the State can check that this company did not get more aid than the limits set.

Many Member States already have state aid compliant Digital Innovation Hubs in place. The funding from the Digital Europe Programme does in principle not affect the state aid assessment for those existing hubs. Member States wishing to set up new Digital innovation hubs might best try to create hubs that offer at 80% of non-economic activity and consider the de Minimis rules for state aid aspects regarding the final beneficiaries.



[21] Commission Regulation (EU) No 1407/2013 of 18 December 2013 on the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union to de minimis aid