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Amendment 206

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on behalf of the Committee on Industry, Research and Energy

Report

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Digital Europe Programme for the period 2021-2027

(COM(2018)0434 – C8-0256/2018 – 2018/0227(COD))

A8-0408/2018

Proposal for a regulation

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AMENDMENTS BY THE EUROPEAN PARLIAMENT*

to the Commission proposal

REGULATION (EU) 2019/...
OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of

establishing the Digital Europe Programme for the period 2021-2027

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 172 and 173(3) thereof,

Having regard to the proposal from the European Commission,

After transmission of the draft legislative act to the national parliaments,

* Amendments: new or amended text is highlighted in bold italics; deletions are indicated by the symbol **■**. Text highlighted in grey has not been agreed in the framework of the interinstitutional negotiations.

Having regard to the opinion of the European Economic and Social Committee¹,

Having regard to the opinion of the Committee of the Regions²,

Acting in accordance with the ordinary legislative procedure,

Whereas:

- (1) This Regulation lays down a financial envelope for the Digital Europe Programme for the period 2021-2027 which is to constitute the prime reference amount, within the meaning of {reference to be updated as appropriate according to the new inter-institutional agreement: point 17 of the Interinstitutional Agreement of 2 December 2013 between the European Parliament, the Council and the Commission on budgetary discipline, on cooperation in budgetary matters and on sound financial management³}, for the European Parliament and the Council during the annual budgetary procedure.
- (2) Regulation (EU, Euratom) 2018/**1046** of the European Parliament and of the Council **■** (the ‘Financial Regulation’) applies to this Programme. It lays down rules on the implementation of the Union budget, including the rules on grants, prizes, procurement, indirect implementation, financial assistance, financial instruments and budgetary guarantees.
- (3) In accordance with the Financial Regulation, Regulation (EU, Euratom) No 883/2013 of the European Parliament and of the Council⁴, Council Regulation (Euratom, EC) No 2988/95⁵, Council Regulation (Euratom, EC) No 2185/96⁶ and

¹ OJ C, p. tbc

² OJ C, p. tbc

³ *Reference to be updated*: OJ C 373, 20.12.2013, p. 1. *The agreement is available at: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C_.2013.373.01.0001.01.ENG&toc=OJ:C:2013:373:TOC*

⁴ OJ L 248, 18.9.2013, p. 1–22. The regulation is available at: <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32013R0883&rid=1>

⁵ OJ L 312, 23.12.1995, p. 1–4. The regulation is available at <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:31995R2988&rid=1>

⁶ OJ L 292, 15.11.1996, p. 2–5. The regulation is available at <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:31996R2185&rid=1>

Regulation (EU) 2017/1939⁷, the financial interests of the Union are to be protected through proportionate measures, including the prevention, detection, correction and investigation of irregularities including fraud, the recovery of funds lost, wrongly paid or incorrectly used and, where appropriate, the imposition of administrative sanctions. In particular, in accordance with the provisions and procedures laid down in Regulation (EU, Euratom) No 883/2013 of the European Parliament and of the Council and Regulation (Euratom, EC) No 2185/96, the European Anti-Fraud Office (OLAF) may carry out administrative investigations, including on-the-spot checks and inspections, with a view to establishing whether there has been fraud, corruption or any other illegal activity affecting the financial interests of the Union. In accordance with Regulation (EU) 2017/1939, the European Public Prosecutor's Office (EPPO) may investigate and prosecute fraud and other criminal offences affecting the financial interests of the Union, as provided for in Directive (EU) 2017/1371 of the European Parliament and of the Council⁸. In accordance with the Financial Regulation, any person or entity receiving Union funds is to fully cooperate in the protection of the Union's financial interests, to grant the necessary rights and access to the Commission, OLAF, the EPPO and the European Court of Auditors (ECA) and to ensure that any third parties involved in the implementation of the Union funds grant equivalent rights.

- (4) Pursuant to {*reference to be updated as appropriate according to a new decision on OCTs: Article 88 of Council Decision / /EU*⁹}, persons and entities established in overseas countries and territories (OCTs) should be eligible for funding subject to the rules and objectives of the Programme and possible arrangements applicable to the Member State to which the relevant overseas country or territory is linked. ***Their effective participation in the Programme should be monitored and regularly evaluated by the European Commission.***

⁷ OJ L 283, 31.10.2017, p. 1–71. The regulation is available at <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32017R1939&rid=1>

⁸ Directive (EU) 2017/1371 of the European Parliament and of the Council of 5 July 2017 on the fight against fraud to the Union's financial interests by means of criminal law (OJ L 198, 28.7.2017, p. 29).

⁹ Council Decision / /EU.

- (5) Pursuant to paragraph 22 and 23 of the Inter-institutional agreement for Better Law-Making of 13 April 2016¹⁰, there is a need to evaluate this Programme on the basis of information collected through specific monitoring requirements, *correlated to existing needs and complying with the Regulation (EU) 2016/679 of the European Parliament and of the Council*¹¹, while avoiding overregulation and administrative burdens, in particular on Member States *and taking into account existing measuring and bench-marking frameworks in the digital field*. These requirements, where appropriate, can include measurable *quantitative and qualitative* indicators, as a basis for evaluating the effects of the Programme on the ground.
- (5a) *The Programme should ensure utmost transparency and accountability of innovative financial instruments and mechanisms that involve the Union budget, especially as regards their contribution, both as regards initial expectations and end results made towards achieving Union objectives.*
- (6) The Tallinn Digital Summit¹² of September 2017 and the Conclusions of the European Council¹³ of 19 October 2017 indicated the need for Europe to invest in our economies and addressing the skills gap to maintain and enhance European competitiveness *and innovation*, our quality of life and social fabric. The European Council concluded that the digital transformation offers immense opportunities for innovation, growth and jobs, will contribute to our global competitiveness, and enhance creative and cultural diversity. Seizing these opportunities requires collectively tackling the challenges posed by the digital transformation and reviewing policies affected by the digital transformation.
- (6a) *Building a strong European digital economy and society will benefit from the good implementation of the Connecting Europe Facility, Wifi4EU and European Electronic Communications Code.*

¹⁰ Interinstitutional Agreement between the European Parliament, the Council of the European Union and the European Commission on Better Law-Making of 13 April 2016; OJ L 123, 12.5.2016, p. 1–14.

¹¹ *Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (OJ L 119, 4.5.2016, p. 1).*

¹² <https://www.eu2017.ee/news/insights/conclusions-after-tallinn-digital-summit>

¹³ <https://www.consilium.europa.eu/media/21620/19-euco-final-conclusions-en.pdf>

(7) The European Council concluded in particular that the Union should urgently address emerging trends: this includes issues such as artificial intelligence **■**, while at the same time ensuring a high level of data protection *in full compliance with Regulation (EU) 2016/679*, digital rights, *fundamental rights* and ethical standards. The European Council invited the Commission to put forward a European approach to artificial intelligence by early 2018 and called on the Commission to put forward the necessary initiatives for strengthening the framework conditions with a view to enable the EU to explore new markets through risk-based radical innovations and to reaffirm the leading role of its industry.

(7c) *Europe has to make decisive investments in its future, building strategic digital capacities in order to benefit from the digital revolution. A substantial budget (of at least 9.2 billion euro) must be ensured at EU level for this purpose, which must be complemented by sizable investment efforts at national and regional level, namely with a consistent and complementary relationship with structural and cohesion funds.*

(8) The Commission's Communication on 'A new, modern Multiannual Financial Framework for a European Union that delivers efficiently on its priorities post-2020'¹⁴ outlines among the options for the future financial framework a programme for Europe's digital transformations to deliver 'strong progress towards smart growth in areas such as high quality data infrastructure, connectivity and cybersecurity. It would seek to secure European leadership in supercomputing, next generation internet, artificial intelligence, robotics and big data. It would reinforce the competitive position of industry and businesses in Europe across the digitised economy and would have a significant impact on *bridging and* filling the skills gap across the Union *so that European citizens have the necessary skills, and knowledge to face the digital transformation*

(9) The Communication "Towards a common European data space"¹⁵, addresses the new measure to be taken as a key step towards a common data space in the EU - a seamless digital area with a scale that will enable the development *and innovation* of new products and services based on data.

¹⁴ COM(2018) 98 final.

¹⁵ COM (2018) 125 final.

- (10) The general objective of the Programme should be to support the digital transformation of industry and to foster better exploitation of the industrial potential of policies of innovation, research and technological development, for the benefit of businesses and citizens all over the Union, ***including the outermost as well as economically disadvantaged regions***. The programme should be structured into five Specific Objectives reflecting key policy areas, namely: high-performance computing **■**, artificial intelligence, ***cybersecurity***, advanced digital skills, and deployment, best use of digital capacities and interoperability. For all these areas, the Programme should also aim at better aligning Union, Member States and regional policies, and pooling of private and industrial resources in order to increase investment and develop stronger synergies. ***Furthermore, the Programme should strengthen the Union's competitiveness and the resilience of its economy.***
- (10a) ***The five Specific Objectives are distinct but interdependent. For example, artificial intelligence needs cybersecurity to be trustable, high performance computing capabilities will be key in supporting learning in the context of artificial intelligence, and all three capacities require advanced digital skills. Although individual actions under this programme may pertain to a single specific objective, the objectives should not be viewed in isolation, but as forming the core of a coherent package.***
- (10b) ***There is a need to support SMEs intending to harness the digital transformation in their production processes. This will allow SMEs to contribute to the growth of the European economy through an efficient use of resources.***
- (11) A central role in the implementation of the Programme should be attributed to ***European*** Digital Innovation Hubs, which should stimulate the broad adoption of advanced digital technologies by industry, ***in particular SMEs and entities employing up to 3 000 employees that are not SMEs (midcaps)***, by public organisations and academia. ***In order to clarify the distinction between Digital Innovation Hubs complying with the eligibility criteria under this Programme and Digital Innovation Hubs established following the Communication of Digitising European Industry (COM(2016) 180 final) and financed by other sources, Digital Innovation Hubs financed under this Programme should be called European Digital Innovation Hubs. The European Digital Innovation Hubs should work***

together as a decentralised network. They 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. They shall act as single-entry points in accessing tested and validated technologies and promote open innovation. 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). The network of European Digital Innovation Hubs should ensure a broad geographical coverage across Europe¹⁶ and should also contribute to the participation of the outermost regions in the Digital Single Market.

- (11a)** *During the first year of the programme, an initial network of European Digital Innovation Hubs should be established through an open and competitive process from entities designated by Member States. To this effect, Member States should be free to propose the candidates in accordance with their national procedures, administrative and institutional structures and the Commission should take utmost account of the opinion of each Member State before the selection of a European Digital Innovation Hub in its territory. Entities which are already carrying out functions as Digital Innovation Hubs in the context of the Digitising European Industry Initiative may, as a result of the competitive, and open process, be designated by Member States as candidates. The Commission may involve independent external experts in the selection process. The Commission and Member States should avoid unnecessary duplication of competences and functions at national and EU level. Hence there should be adequate flexibility when designating the hubs and determining their activities and composition. In order to ensure both a broad geographical coverage across Europe as well as a balance of technologies' or sectors coverage the network might be further enlarged through an open and competitive process.*
- (11b)** *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*

¹⁶ As indicated in the Communication on Digitising European Industry (COM(2016) 180 final)

and also with established networks such as the European Enterprise Network or the EU Invest hubs.

- (11c) *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.*
- (11d) *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.*
- (11e) *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.*
- (12) The Programme should be implemented through projects reinforcing essential digital capacities and their wide use. This should involve **co-financing** with Member States and, when needed, the private sector. ***The co-financing rate should be established in the work programme. Only in exceptional cases might the Union funding cover up to 100% of eligible costs.*** This should notably require reaching a critical mass in procurement to obtain better value for money and guarantee that suppliers in Europe stay at the forefront of technology advancements.
- (13) The policy objectives of this Programme will be also addressed through financial instruments and budgetary guarantee under the **InvestEU** Fund.

- (14) The Programme's actions should be used to ***improve further the Union's digital capacities as well as to*** address market failures or sub-optimal investment situations, in a proportionate manner, without duplicating or crowding out private financing and have a clear European added value.
- (15) To achieve maximum flexibility throughout the lifetime of the programme and develop synergies between its components, each of the specific objectives may be implemented through all instruments available under the Financial Regulation. The delivery mechanisms to be used are direct management and indirect management when Union financing should be combined with other sources of financing or when execution requires the setup of commonly governed structures. ***Moreover, in order to respond in particular to new developments and needs, e.g. new technologies, the Commission may, within the annual budgetary procedure and in accordance with the Financial Regulation, propose to deviate from the indicative amounts set out in this Regulation.***
- (15a) ***In order to ensure efficient allocation of funds from the general budget of the Union, it is necessary to ensure the European added value of all actions and activities carried out with the Programme, their complementarity to Member States' activities, while consistency, complementarity and synergies should be sought with funding programmes supporting policy areas with close links to each other. While for directly and indirectly managed actions the relevant work programmes provide a tool for ensuring consistency, collaboration between the Commission and the relevant Member States authorities should be established to ensure consistency and complementarities also between directly or indirectly managed funds and funds subject to shared management.***
- (16) The high performance computing and the related data processing capacities in the Union should allow to ensure wider use of high performance computing by industry and, more generally, in areas of public interest in order to seize unique opportunities that supercomputers bring to society as regards health, environment and security as well as competitiveness of industry, notably small and medium-sized enterprises. ***Acquiring a world-class supercomputers, will secure the Union's supply system and help deploy services for simulation, visualisation and prototyping while ensuring a HPC system in accordance with Union values and principles.***

- (17) The support to the Union's intervention in this area was expressed by the Council¹⁷ and, by the European Parliament¹⁸. Moreover, in 2017-2018 *nineteen* Member States signed the EuroHPC Declaration¹⁹, a multi-government agreement where they commit to collaborate with the Commission to build and deploy state-of-the-art HPC and data infrastructures in Europe that would be available across the Union for scientific communities, public and private partners.
- (18) For the high performance computing specific objective a joint undertaking is deemed the most suited implementation mechanism, in particular to coordinate national and Union strategies and investments in high performance computing infrastructure and research and development, pool resources from public and private funds, and safeguard the economic and strategic interests of the Union²⁰. Moreover, high performance computing competence centres *as defined in Article 2(4) of the Council Regulation (EU) 2018/1488* in Member States will provide high performance computing services to industry, *including SMEs and start-ups*, academia and public administrations
- (19) Developing capacity related to artificial intelligence is a crucial driver for the digital transformation of industry, *services* and also of the public sector. Ever more autonomous robots are used in factories, deep sea application, homes, cities and hospitals. Commercial artificial intelligence platforms have moved from testing to real applications in health and environment; all major car manufacturers are developing self-driving cars, and machine learning techniques are at the heart of all main web platforms and big data applications. *It is essential for Europe to join forces at all levels to be competitive internationally. The Member States have acknowledged this through concrete commitments for collaboration in a coordinated action plan.*

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20 Impact Assessment accompanying the document "Proposal for a Council Regulation on establishing the EuroHPC Joint Undertaking" (<https://ec.europa.eu/digital-single-market/en/news/proposal-council-regulation-establishing-eurohpc-joint-undertaking-impact-assessment>).

- (19a) *Libraries of algorithms may cover a large set of algorithms, including simple solutions such as classification algorithms, neural network algorithms or planning or reasoning algorithms, or more elaborated solutions, such as speech recognition algorithms, navigation algorithms embedded in autonomous devices, such as drones or in autonomous cars, AI algorithms built-in robots enabling them to interact with and adapt to their environment. Libraries of algorithms should be made easily accessible to all based on fair, reasonable and non-discriminatory terms.*
- (19b) *In its resolution of 1 June 2017 on digitising European industry the European Parliament pointed out the impact of language barriers on industry and its digitisation. In this context the development of large-scale AI-based language technologies such as automatic translation, speech recognition, big data text analytics, dialog and question-answering systems are essential to preserve linguistic diversity, ensure inclusiveness and enable human-human and human-machine communication.*
- (19c) *Products and services based on artificial intelligence should be user-friendly, legally compliant by default and provide consumers with more choice and more information, in particular on the quality of products and services.*
- (20) The availability of large-scale data sets and testing and experimentation facilities are of major importance for the development of artificial intelligence, *including language technologies.*
- (21) In its resolution of 1 June 2017 on digitising European industry²¹ the European Parliament highlighted the importance of a common European cybersecurity approach, recognising the need to raise awareness and considered cyber-resilience as a crucial responsibility for business leaders and national and European industrial security policymakers, *as well as the implementation of security and privacy by default and by design.*

²¹ Document ref. A8-0183/2017, available at:
<http://www.europarl.europa.eu/sides/getDoc.do?type=TA&language=EN&reference=P8-TA-2017-0240>

- (22) Cybersecurity is a challenge for the whole Union that cannot be addressed only with national initiatives. Europe's cybersecurity capacity should be reinforced to endow Europe with the necessary capacities to protect citizens, **public administrations** and businesses from cyber threats. In addition consumers should be protected when using connected products that can be hacked and compromise their safety. This should be achieved together with Member States and private sector by developing, and ensuring coordination between, projects reinforcing Europe's capacities in cybersecurity and ensuring the wide deployment of latest cybersecurity solutions across the economy, as well as by aggregating the competences in this field to ensure critical mass and excellence.
- (23) In September 2017, the Commission put forward a package of initiatives²² setting out a comprehensive Union approach to cybersecurity, with the aim of reinforcing Europe's capacities to deal with cyber-attacks and threats and to strengthen technology and industrial capacity in this field. ***This includes Regulation on the EU Cybersecurity Agency (ENISA) and information and communication technology cybersecurity certification (Cybersecurity Act).***
- (24) Trust is a prerequisite for the Digital Single Market to function. Cybersecurity technologies such as digital identities, cryptography or intrusion detection, and their application in areas such as finance, industry 4.0, energy, transportation, healthcare, or e-government are essential to safeguard the security and trust of online activity and transactions by both citizens, public administrations, and companies.
- (25) The European Council in its conclusions of 19 October 2017 stressed that to successfully build a Digital Europe, the Union needs in particular labour markets, training and education systems fit for the digital age and that there is a need to invest in digital skills, to empower and enable all Europeans;
- (26) The European Council in its conclusions of 14 December 2017 called on Member States, the Council and the Commission to take forward the agenda of the Gothenburg Social Summit of November 2017 including the European Pillar of Social Rights as well as education and training and the delivery of the new European Skills Agenda. The European Council also asked the Commission, the Council and

²² <https://ec.europa.eu/digital-single-market/en/policies/cybersecurity>

the Member States to examine possible measures addressing the skills challenges linked to digitisation, cybersecurity, media literacy and artificial intelligence and the need for an inclusive, lifelong-learning-based and innovation-driven approach to education and training. In response, the Commission presented on 17 January 2018 a first package of measures, addressing key competences, digital skills²³ as well as common values and inclusive education. In May 2018, a second package of measure was launched advancing work to build a European Education Area by 2025, which also emphasises the centrality of digital skills.

- (26a) ***Media literacy means the essential competencies (knowledge, skills and attitudes) that allow citizens to engage with media and other information providers effectively, and to develop critical thinking and life-long learning skills for socializing and becoming active citizens;***
- (26b) ***Considering the need for a holistic approach, the Programme should also take into account the areas of inclusion, qualification, training and specialization which, in addition to the advanced digital competences, are decisive for the creation of added value in the knowledge society.***
- (27) In its resolution of 1 June 2017 on digitising European industry²⁴ the European Parliament stated that education, training and lifelong learning are the cornerstone of social cohesion in a digital society. ***It furthermore demanded that the gender perspective would be incorporated in all digital initiatives, emphasizing the need to address the gender gap within the ICT sector, since this is essential for Europe's long-term growth and prosperity;***
- (28) The advanced digital technologies supported by this Programme, such as high performance computing, cybersecurity and artificial intelligence are now sufficiently mature to move beyond the research arena and be deployed, implemented and scaled-up at Union level. Just as the deployment of these technologies require a Union

²³ Within this package, the Digital Education Action Plan (COM(2018) 22 final) sets out a series of measure to support Member States in the development of digital skills and competences in formal education.

²⁴ Document ref. A8-0183/2017, available at:
<http://www.europarl.europa.eu/sides/getDoc.do?type=TA&language=EN&reference=P8-TA-2017-0240>

response so does the skills dimension. Training opportunities in advanced digital skills, **including data protection competencies**, need to be scaled up, increased and made accessible throughout the EU. Failing this could impede the smooth deployment of advanced digital technologies and hamper the overall competitiveness of Union's economy. The actions supported by this programme are complementary to those supported by the ESF, ERDF **ERASMUS + and Horizon Europe programmes. They will target the workforce, in the private as well as the public sector, in particular ICT professionals and other related professionals, as well as students. These categories include trainees and trainers. The workforce refers to the economically active population, and includes both employed (employees and self-employed) and unemployed people.**

(29) Modernising public administrations and services through digital means is crucial to reducing administrative burden on ■ citizens ■ by making their interactions with public authorities faster, more convenient and less costly, as well as by increasing the efficiency, **transparency** and the quality of the services provided to citizens and businesses **while at the same time increasing the efficiency of public spending.** Since a number of services of public interest already have a Union dimension, the support to their implementation and deployment at Union level should ensure that citizens and businesses **may** benefit from the access to high quality **multilingual** digital services across Europe. **Moreover, Union support in this area is expected to encourage re-use of public sector information.**

(29a) **Digitalisation can facilitate and improve barrier-free accessibility for everyone, including older people, persons with reduced mobility or a disability, and those in remote or rural areas.**

30) The digital transformation of the areas of public interest such as healthcare²⁵, mobility, justice, earth/environmental monitoring, **security, reduction of carbon emissions, energy infrastructure**, education **and training** and culture requires the continuation, and expansion of Digital Service Infrastructures, which make secure cross-border exchange of data possible and foster national development. Their

²⁵ http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=51628

coordination under this Regulation best achieves the potential for exploiting synergies.

- (30a) *The deployment of necessary digital technologies, in particular those under specific objectives of high performance computing, artificial intelligence and cybersecurity and trust is key to reap the benefits of digital transformation and might be complemented by other leading edge and future technologies, such as distributed ledgers (e.g. blockchain).*
- (30b) *The digital transformation should allow EU citizens to access, use and manage their personal data securely across borders, irrespective of their location or the location of the data.*
- (31) The Council of the EU in its Tallinn declaration of 6 October 2017 concluded that digital progress is transforming our societies and economies to the core, challenging the effectiveness of previously developed policies in a broad range of areas as well as the role and function of the public administration overall. It is our duty to anticipate and manage these challenges to meet the needs and expectations of citizens and businesses.
- (32) The modernisation of European public administrations is one of the key priorities for successful implementation of the Digital Single Market Strategy. The mid-term evaluation of the Strategy highlighted the need to strengthen the transformation of public administrations and to ensure citizens have easy, trusted, and seamless access to public services.
- (33) The Annual Growth Survey published by the Commission in 2017²⁶ shows that the quality of European public administrations has a direct impact on the economic environment and is therefore crucial to stimulating productivity, competitiveness, economic cooperation, *sustainable* growth, employment *and high-quality jobs*. In particular, efficient and transparent public administration and effective justice systems are necessary to support economic growth and deliver high quality services for firms and citizens.

²⁶ COM(2016) 725 final.

- (34) 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 ***cross-border co-operation, promoting European standards***, 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, a holistic cross-sector and cross-border approach to interoperability should be 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. Accordingly, the span of activities would go beyond the usual lifecycle of solutions to include all the interventions elements that would support the necessary framework conditions for sustained interoperability at large. ***The Programme should also facilitate cross-fertilisation between the different national initiatives, leading to the development of the digital society.***
- (34a) ***The programme should, therefore, encourage open source solutions in order to allow reuse, increase trust and secure transparency. This will have a positive impact on the sustainability of funded projects.***
- (35) The budget allocated to specific activities dedicated to the implementation of the interoperability framework and the interoperability of developed solutions is EUR 194 million
- (36) European Parliament resolution of 1 June 2017 on digitising European industry²⁷ stresses the importance of unlocking sufficient public and private finance for the digitisation of Europe's industry.
- (37) In April 2016 the Commission adopted the Digitising European Industry initiative to ensure that "any industry in Europe, big or small, wherever situated and in any sector can fully benefit from digital innovations". ***This is of particular relevance to SMEs in the cultural and creative sectors.***

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- (38) The European Economic and Social Committee welcomed the communication on "Digitising European Industry" and considered it, together with accompanying documents, as "the first step in a vast European work programme to be carried out in close mutual cooperation between all interested public and private parties".²⁸
- (39) Reaching the target objectives may require leveraging the potential of complementary technologies in the networking and computing domains, as stated in the Communication "Digitising European Industry"²⁹ that recognises "availability of world class networking and cloud infrastructure" as an essential *component* of industry digitisation.
- (40) **Regulation (EU) 2016/679** by providing for a single set of rules directly applicable in the Member States legal orders, *guarantees* the free flow of personal data between EU Member States and reinforce trust and security of the individuals, two indispensable elements for a real Digital Single Market. *All* actions undertaken under this Programme, when they involve the processing of personal data, should therefore support the application of **Regulation (EU) 2016/679**, for instance in the field of artificial intelligence and blockchain technology. *They should support the development of digital technologies that comply with the “data protection by design and by default” obligations.*
- (41) The Programme should be implemented in full respect of the international and EU framework of intellectual property protection and enforcement. The effective protection of intellectual property plays a key role in innovation and thus is necessary for the effective implementation of the Programme.
- (42) Bodies implementing this Programme should comply with the provisions applicable to the Union institutions, and with national legislation regarding the handling of information, in particular sensitive non-classified information and EU classified information. *For Specific Objective 3, security reasons may require the exclusion of entities controlled from third countries from calls for proposals and tenders under this programme. In exceptional cases such an exclusion may also be*

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²⁹ COM (2016) 180 final: Digitising European Industry – Reaping the full benefits of a digital single market.

required for Specific Objectives 1 and 2. The security reasons for such an exclusion should be proportionate and duly justified with reference to the risks inclusion of such entities would represent.

- (43) Reflecting the importance of tackling climate change in line with the Union's commitments to implement the Paris Agreement and the United Nations Sustainable Development Goals, this Programme will contribute to mainstream climate actions and lead to the achievement of an overall target of 25% of the EU budget expenditures supporting climate objectives³⁰. Relevant actions *should* be identified during the Programme's preparation and implementation, and reassessed in the context of the relevant evaluations and review processes.

- (45) *Work programmes should be adopted so that the objectives of the Programme are achieved in accordance with the Union's and Member States' priorities, while ensuring consistency, transparency and continuity of joint action by the Union and the Member States.* The work programmes should be adopted in principle every two years, or, if justified by the needs related to the implementation of the programme, *on an annual basis*. The types of financing and the methods of implementation under this Regulation should be chosen on the basis of their ability to achieve the specific objectives of the actions and to deliver results, taking into account, in particular, the costs of controls, the administrative burden, and the expected risk of non-compliance. This should include consideration of the use of lump sums, flat rates and unit costs, as well as financing not linked to costs as referred to in Article 125(1) of the Financial Regulation.

- (46) The power to adopt acts in accordance with Article 290 of the Treaty on the Functioning of the European Union should be delegated to the Commission concerning amendments to *Annexes I and II* to review and/or complement the indicators. It is of particular importance that the Commission carry out appropriate consultations during its preparatory work, including at expert level, and that those consultations be conducted in accordance with the principles laid down in the Interinstitutional Agreement on Better Law-Making of 13 April 2016. In particular,

³⁰ COM(2018) 321 final, page 1.

to ensure equal participation in the preparation of delegated acts, the European Parliament and the Council receive all documents at the same time as Member States' experts, and their experts systematically have access to meetings of Commission expert groups dealing with the preparation of delegated acts.

- (47) This Regulation respects fundamental rights and observes the principles recognised in the Charter of Fundamental Rights of the European Unions, notably those referred under Articles 8, 11, 16, 21, 35, 38 and 47 regarding the protection of personal data, the freedom of expression and information, the freedom to conduct business, the prohibition of discrimination, healthcare, consumer protection and the right to effective remedy and fair trial. The Member States must apply this Regulation in a manner consistent with these rights and principles'.

- (49) Horizontal financial rules adopted by the European Parliament and the Council on the basis of Article 322 of the Treaty on the Functioning of the European Union apply to this Regulation. These rules are laid down in the Financial Regulation and determine in particular the procedure for establishing and implementing the budget through grants, procurement, prizes, indirect implementation, and provide for checks on the responsibility of financial actors. Rules adopted on the basis of Article 322 TFEU also concern the protection of the Union's budget in case of generalised deficiencies as regards the rule of law in the Member States, as the respect for the rule of law is an essential precondition for sound financial management and effective EU funding.

CHAPTER I GENERAL PROVISIONS

Article 1 Subject matter

This Regulation establishes the Digital Europe programme ('Programme').

It lays down the objectives of the Programme, the budget for the period 2021 - 2027, the forms of European Union funding and the rules for providing such funding.

Article 2
Definitions

For the purposes of this Regulation, the following definitions shall apply:

- (a) 'Blending operation' means actions supported by the EU budget, including within blending facilities pursuant to Article 2(6) of the Financial Regulation, combining non-repayable forms of support and/or financial instruments from the EU budget with repayable forms of support from development or other public finance institutions, as well as from commercial finance institutions and investors.
- (b) 'Legal entity' means any natural person, or legal person created and recognised as such under national law, Union law or international law, which has legal personality and which may, acting in its own name, exercise rights and be subject to obligations, or an entity without a legal personality in accordance with Article 197(2)(c) of the Financial Regulation;
- (c) 'Third country' means a country that is not member of the Union;
- (d) 'Associated country' means a third country which is party to an agreement with the Union allowing for its participation in the Programme pursuant to Article [10];
- (*da*) "international organisation of European interest" means an international organisation, the majority of whose members are Member States or whose headquarters are in a Member State;
- (e) '**European** Digital Innovation Hub' means legal entity ■ selected in *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.*
- (f) 'Advanced digital skills' are those skills and *professional* competences *requiring knowledge, and experience* necessary to *understand, design, develop, manage, test,*

deploy, *use* and maintain the technologies, *products and services* supported by this Regulation *as referred to under Article 3(2)(a), (b), (c) and (e)*.

- (fa) *'European Partnership' means an initiative as defined in [insert reference Horizon Europe FP Regulation]*
- (fb) *'small and medium-sized enterprises' or 'SMEs' means micro, small and medium-sized enterprises as defined in Article 2 of the Annex to Commission Recommendation 2003/361/EC;*
- (g) *'Cybersecurity' means all activities necessary to protect network and information systems, their users, and affected persons from cyber threats;*
- (h) *'Digital Service Infrastructures' means infrastructures which enable networked services to be delivered electronically, typically over the internet;*
- (i) *'Seal of Excellence' means a certified label as defined in [insert reference Horizon Europe FP Regulation]*

Article 3

Programme objectives

1. The Programme has the following general objective: to support *and accelerate* the digital transformation of the European economy, *industry* and society, *to* bring its benefits to European citizens, *public administrations* and businesses *across the Union, and improve the competitiveness of Europe in the global digital economy while contributing to bridging the digital divide across the Union and reinforcing the Union's strategic autonomy. This requires holistic, cross-sectoral and cross-border support and a stronger Union contribution.* The Programme, *implemented in close coordination with other Union funding programmes as applicable*, will:
 - (a) *strengthen and promote* Europe's capacities in key digital technology areas through large-scale deployment,
 - (b) widen their diffusion and uptake in *the private sector and in* areas of public interest, *promoting their digital transformation and access to digital technologies*

2. The Programme will have five *interrelated* specific objectives:
- (a) Specific Objective 1: High Performance Computing
 - (b) Specific Objective 2: Artificial Intelligence
 - (c) Specific Objective 3: Cybersecurity and Trust
 - (d) Specific Objective 4: Advanced Digital Skills
 - (e) Specific Objective 5: Deployment, best use of digital capacity and interoperability

Article 4

High Performance Computing

1. The financial intervention by the Union under Specific Objective 1. High Performance Computing shall pursue the following operational objectives:
- (a) deploy, coordinate at the Union level and operate an integrated **demand-oriented and application driven** world-class exascale **supercomputing** and data infrastructure in the Union that shall be **easily accessible** to public and private users, **notably SMEs, irrespective of which Member State they are located in, and for research purposes, in accordance with {Regulation establishing the European High Performance Computing Joint Undertaking}**;
 - (b) deploy ready to use/operational technology resulting from research and innovation to build an integrated Union high performance computing ecosystem, covering **various aspects in the** scientific and industrial value chain segments, including hardware, software, applications, services, interconnections and digital skills, **with a high level of security and data protection**;
 - (c) deploy and operate a post-exascale **infrastructure**, including the integration with quantum computing technologies and **research infrastructures** for computing science; **encourage the development within the Union of the hardware and software necessary for such deployment.**

2. *The actions under Specific Objective 1 shall be primarily implemented through the Joint Undertaking established by Council Regulation (EU) 2018/1488 of 28 September 2018 establishing the European High Performance Computing Joint Undertaking³¹.*

Article 5

Artificial Intelligence

1. The financial intervention by the Union under Specific Objective 2. Artificial Intelligence shall pursue the following operational objectives:

- (a) build up and strengthen core artificial intelligence capacities *and knowledge* in the Union, including *quality* data resources *and corresponding exchange mechanisms* and libraries of algorithms *while guaranteeing a human-centric and inclusive approach respecting European values*.

In *full* compliance with data protection legislation, *artificial intelligence based solutions and data made available shall respect the principle of privacy and security by design*.

- (b) make those capacities accessible to all businesses, *especially SMEs and start-ups, civil society, not-for-profit organisations, research institutions, universities*, and public administrations *to maximise their benefit to European society and economy* ;
- (c) reinforce and network ■ artificial intelligence testing and experimentation facilities in Member States.
- (ca) *in order to develop and reinforce commercial application and production systems, facilitating integration of technologies in value chains, development of innovative business models, and shortening the time passed from innovation to industrialisation; and to foster the take up of AI-based solution in areas of public interest and society*.

³¹ *Regulation establishing the European High Performance Computing Joint Undertaking. 10594/18. Brussels, 18 September 2018 (OR. en).*
<http://data.consilium.europa.eu/doc/document/ST-10594-2018-INIT/en/pdf>

- 1b. The Commission in accordance with the relevant Union and international laws, including the Charter of Fundamental Rights of the European Union, and taking into account inter alia the recommendations of the High-Level Expert Group on Artificial Intelligence shall specify conditions related to ethical issues in the work programmes under Specific objective 2. The calls or the grant agreements shall include relevant conditions as set out in work programmes.**

Where appropriate, the Commission shall carry out ethics checks. Funding for actions which do not comply with the conditions of ethical issues may be suspended, terminated or reduced at any time in accordance with the Financial Regulation.

- 1c. The actions under this specific objective shall be implemented primarily through direct management.**

The ethical and legal requirements provided for in this article shall apply to all actions of Specific Objective 2 regardless of the implementation mode.

Article 6

Cybersecurity and Trust

- 1. The financial intervention by the Union under Specific Objective 3. Cybersecurity and Trust shall pursue the following operational objectives:**
- (a) support, together with Member States, the *build-up and* procurement of advanced cybersecurity equipment, tools and data infrastructures in *order to achieve a common high level of cybersecurity at the European level, in full compliance with data protection legislation and the fundamental rights while ensuring EU strategic autonomy.***
 - (b) support the *build-up and* best use of European knowledge, capacity and skills related to cybersecurity; *and the sharing and mainstreaming of best practices,***
 - (c) ensure a wide deployment of the latest cybersecurity solutions across the economy; *with special attention to public services and essential economic operators such as SMEs;***

- (d) reinforce capabilities within Member States and private sector to help them meet Directive (EU) 2016/1148 of the European Parliament and of the Council of 6 July 2016 concerning measures for a high common level of security of network and information systems across the Union⁷⁹ ***including through measures aiming at developing a cybersecurity culture within organisations.***
- (da) ***improve resilience against cyber-attacks, to increase risk awareness and knowledge of basic security processes among users, particularly public services, SMEs and start-ups, to ensure that companies have basic levels of security, such as end-to-end encryption of data and communications and software updates, and to encourage the use of the security-by-design and by default knowledge of basic security processes as well as cyber-hygiene;***

1a. The actions under Specific objective 3 Cybersecurity and trust shall be primarily implemented through the European Cybersecurity Industrial, Technology and Research Competence Centre and the Cybersecurity Competence Network in accordance with [Regulation..... of the European Parliament and of the Council³²].

Article 7

Advanced Digital Skills

- 1. The financial intervention by the Union under Specific Objective 4. Advanced Digital skills shall support the development of advanced digital skills in areas supported by this programme, thus contributing to increase Europe's talent pool, ***bridging the digital divide***, fostering greater professionalism ***taking into account gender balance***, especially with regard to high performance ***and cloud*** computing, big data analytics, cybersecurity, distributed ledger technologies (***e.g. blockchain***), ***quantum technologies***, robotics, artificial intelligence ***To tackle skills mismatches and encourage specialisation in digital technologies and applications***, the financial intervention shall pursue the following operational objectives:
 - (a) support the design and delivery of ***high quality*** long-term trainings and courses ***including blended learning*** for students and the workforce;

³² ***Regulation..... of the European Parliament and of the Council establishing the European Cybersecurity Industrial, Technology and Research Competence Centre and the Network of National Coordination Centres.***

- (b) support the design and delivery of **high quality** short-term trainings and courses for **the workforce, in particular in SMEs and in the public sector;**
 - (c) support **high quality** on-the-job trainings and **work placements** for students **including** traineeships **and the workforce, in particular in SMEs and in the public sector.**
2. **The actions under this specific objective Advanced Digital Skills shall be implemented primarily through direct management.**

Article 8

Deployment, best use of digital capacities and Interoperability

1. The financial intervention by the Union under Specific Objective 5. Deployment, best use of digital capacities and Interoperability shall achieve the following operational objectives **while bridging the digital divide:**
- (a) **support** the public sector and areas of public interests, such as health and care, education, judiciary, **customs**, transport, **mobility**, energy, environment, cultural and creative sectors, **including relevant businesses established within the Union, to effectively** deploy and access state-of-the-art digital technologies, **such as** high performance computing, artificial intelligence and cybersecurity;
 - (b) deploy, operate and maintain trans-European interoperable **state of the art** Digital Service Infrastructures **across the Union** (including related services) in complementarity with national and regional actions;
 - (ba) **support integration and use of trans-European Digital Service Infrastructures and of agreed European digital standards in the public sector and areas of public interests to facilitate cost-efficient implementation and interoperability;**
 - (c) facilitate the development, update and use of solutions and frameworks by European public administrations, businesses and citizens, including **open source and** the re-use of interoperability solutions and frameworks;

- (d) offer to **the public sector and the Union industry, notably SMEs, easy** access to testing and piloting of digital technologies **as well as scaling up the use thereof**, including their cross-border use;
- (e) support the uptake **by the public sector and the Union industry, notably SMEs and start-ups**, of advanced digital and related technologies, including in particular high performance computing, artificial intelligence, cybersecurity, **other leading edge** and future **■** technologies, **such as distributed ledgers (e.g. blockchain)**;
- (f) support the design, testing, implementation, and deployment **and maintenance** of interoperable digital solutions, **including digital government solutions**, for EU level public services delivered through a data-driven reusable solutions platform, fostering innovation and establishing common frameworks in order to unleash the full potential of the public administrations' services for European citizens and businesses;
- (g) ensure a continuous capacity at the Union level **to lead digital development, in addition** to observe, analyse and adapt to fast-evolving digital trends, as well as sharing and mainstreaming best practices
- (h) support cooperation towards achieving a European ecosystem for trusted **datasharing and digital** infrastructures using **inter alia** distributed ledger services and applications, including support for interoperability and standardisation and fostering the deployment of EU cross-border applications **based on security and privacy by design, respecting consumer and data protection legislation**;
- (i) build up and strengthen the **European** Digital Innovation Hubs **and their network**.

2. ***The actions under this specific objective shall be implemented primarily through direct management.***

Article 9

Budget

1. The financial envelope for the implementation of the Programme for the period 2021–2027 shall be EUR **8 192 391 000 in 2018 prices** (EUR 9 194 000 000 in current prices).
2. The indicative distribution of the referred amount shall be:
 - (a) up to **EUR 2 404 289 438 in 2018 prices** (EUR 2 698 240 000 *in current prices*) for Specific Objective 1, High Performance Computing
 - (b) up to **EUR 2 226 192 703 in 2018 prices** (EUR 2 498 369 000 *in current prices*) for Specific Objective 2, Artificial Intelligence
 - (c) up to **EUR 1 780 954 875 in 2018 prices** (EUR 1 998 696 000 *in current prices*) for Specific Objective 3, Cybersecurity and Trust
 - (d) up to EUR **623 333 672 in 2018 prices** (EUR 699 543 000 *in current prices*) **for** Specific Objective 4, Advanced Digital skills
 - (e) up to EUR **1 157 620 312 in 2018 prices** (EUR 1 299 152 000 *in current prices*) **for** Specific Objective 5, Deployment, best use of digital capacities and Interoperability
3. The amount referred to in paragraph 1 may **also** be used for technical and administrative assistance for the implementation of the Programme, such as preparatory, monitoring, control, audit and evaluation activities including corporate information technology systems.
4. Budgetary commitments for actions extending over more than one financial year may be broken down over several years into annual instalments.
5. Resources allocated to Member States under shared management may, at their request, be transferred to the Programme, **including to complement grants awarded to the action up to 100% of the total eligible cost where possible, without prejudice to the co-financing principle as laid down in Art. 190 of the Financial Regulation and to State-Aid rules**. The Commission shall implement those resources directly in

accordance with point (a) of Article 62(1) of the Financial Regulation or indirectly in accordance with point (c) of that Article. **Those** resources shall be used for the benefit of the Member State concerned **only**.

6. Without prejudice to the Financial Regulation, expenditure for actions resulting from projects included in the first work programme may be eligible as from 1 January 2021.

Article 10

Third countries associated to the Programme

1. ***The programme shall be open to*** Members of the European Free Trade Association, which are members of the European Economic Area, in accordance with the conditions laid down in the European Economic Area agreement;

2. ***Full or partial association to the programme of third countries that are not referred to in paragraph 1 shall be based on a case by case assessment of the Specific objectives***, in accordance with the conditions laid down in ***a specific agreement covering the participation of the third country to any Union programme, provided that this specific agreement fully respects the following criteria:***

- ***the participation of the third country is in the interest of the Union;***
- ***the participation contributes to achieving the objectives lay down in article 3,***
- ***the participation does not raise any security concerns and fully respects the relevant security requirements lay down in article 12,***
- ***the agreement ensures a fair balance as regards the contributions and benefits of the third country participating in the Union programmes;***
- ***the agreement lays down the conditions of participation in the programmes, including the calculation of financial contributions to individual programmes and their administrative costs. These contributions shall***

constitute assigned revenues in accordance with Article [21(5)] of [the new Financial Regulation];

- *the agreement does not confer to the third country a decisional power on the programme;*
- *the agreement guarantees the rights of the Union to ensure sound financial management and to protect its financial interests.*

2a. When preparing the work programmes, the European Commission or other relevant implementing bodies, shall assess on a case-by-case basis whether the conditions laid down in the agreement referred to in paragraph 2 are met for the actions included in the work programmes.

Article 11

International cooperation

1. The Union may cooperate with third countries mentioned in Article 10, with other third countries and with international organisations or bodies established in those countries, in particular within the framework of the Euro-Mediterranean and Eastern Partnerships and with neighbouring countries, in particular those of the Western Balkans and Black Sea regions. Without prejudice to Article **18**, related costs shall not be covered by the programme.

2. The cooperation with third countries and organisations mentioned in paragraph 1 under Specific Objective **1. High Performance Computing, Specific Objective 2. Artificial Intelligence and Specific Objective 3. Cybersecurity and Trust** shall be subject to Article 12.

Article 12

Security

1. Actions carried out under the Programme shall comply with the applicable security rules and in particular the protection of the classified information against unauthorised disclosure, including compliance with any relevant national and Union law. In case of actions carried out outside the Union **using and/or generating classified information**, it is necessary that, in addition to the compliance with above

requirements, a security agreement must have been concluded between the Union and the third country in which the activity is conducted.

2. Where appropriate, proposals and tenders shall include a security self-assessment identifying any security issues and detailing how those issues will be addressed in order to comply with the relevant national and Union laws.
3. Where appropriate, the Commission or funding body shall carry out a security scrutiny for proposals raising security issues.
4. Where appropriate, the actions shall comply with Commission Decision (EU, Euratom) 2015/444/EC³³, and its implementing rules.
5. The work programme may also provide that legal entities established in associated countries and legal entities established in the EU but controlled from third countries are not eligible for participation in all or some actions under Specific Objective 3 for *duly justified* security reasons. In such cases calls for proposals and calls for tenders shall be restricted to entities established or deemed to be established in Member States and controlled by Member States and/or nationals of Member States.

If duly justified for security reasons, the work programme may also provide that the legal entities established in associated countries and legal entities established in the EU but controlled from third countries may be eligible for participating in all or some actions under Specific Objectives 1 and 2 only if they comply with conditions that relate to the requirements to be fulfilled by those legal entities to guarantee the protection of the essential security interest of the Union and its Member States and to ensure the protection of classified documents information. Those conditions shall be set out in the work programme.

- 5a. *Where appropriate the Commission shall carry out security checks. Funding for actions which do not comply with the conditions related to security issues may be suspended, terminated or reduced at any time in accordance with the Financial Regulation.*

³³ Commission Decision (EU, Euratom) 2015/444 of 13 March 2015 on the security rules for protecting EU classified information (OJ L 72, 17.3.2015, p. 53).

Article 13

Synergies with other Union programmes

1. The Programme is designed to be implemented enabling synergies, as further described in Annex III, with other Union funding programmes, in particular through arrangements for complementary funding from EU programmes where management modalities permit; either in sequence, in an alternating way, or through the combination of funds including for the joint funding of actions. ***The Commission shall ensure that when leveraging the complementary character of the programme with other European funding programmes the achievement of Specific objectives 1 to 5 are not hampered.***
2. ***The Commission, in cooperation with the Member States, shall ensure the overall consistency and complementarity of the Programme with the relevant policies and Union programmes. To this effect, the Commission shall facilitate setting up appropriate mechanisms of coordination between relevant authorities and between authorities and the European Commission and shall establish appropriate monitoring tools*** ■ to systematically ensure synergies between the Programme and any relevant EU funding instruments. The arrangements shall contribute to avoiding duplications and maximising impact of expenditure.

Article 14

Implementation and forms of funding

1. The Programme shall be implemented in direct management in accordance with the Financial Regulation or in indirect management with bodies referred to in Article 62(1)(c) ■ of the Financial Regulation ***in accordance with Articles 4 - 8.*** Funding bodies may depart from the rules for participation and dissemination laid down in this regulation only if this is provided for in the basic act setting up the funding body and/or entrusting budget implementation tasks to it or, for funding bodies under Article 62(1)(c)(ii), (iii) or (v) of the Financial Regulation, if it is provided for in the contribution agreement and their specific operating needs or the nature of the action so require.

2. The Programme may provide funding in any of the forms laid down in the Financial Regulation, including notably procurement as a primary form as well as grants and prizes.

Where the achievement of an objective of the action requires the procurements of innovative good and services, grants may only be awarded to beneficiaries that are contracting authorities or contracting entities as defined in Directives 2014/24/EU³⁴, 2014/25/EU³⁵ and 2009/81/EC³⁶.

Where the supply of innovative digital goods or services that are not yet available on a large-scale commercial basis is necessary for the achievement of the objectives of the action, the procurement procedure may authorise the award of multiple contracts within the same procedure.

For duly justified reasons of public security, the contracting authority may impose the condition for the place of performance of the contract to be situated within the territory of the Union.

The Programme may also provide financing in the form of financial instruments within blending operations.

3. Contributions to a mutual insurance mechanism may cover the risk associated with the recovery of funds due by recipients and shall be considered a sufficient guarantee under the Financial Regulation. The provisions laid down in [Article X of Regulation XXX successor of the Regulation on the Guarantee Fund] shall apply.

³⁴ *Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC Text with EEA relevance*

³⁵ *Directive 2014/25/EU of the European Parliament and of the Council of 26 February 2014 on procurement by entities operating in the water, energy, transport and postal services sectors and repealing Directive 2004/17/EC Text with EEA relevance*

³⁶ *Directive 2009/81/EC of the European Parliament and of the Council of 13 July 2009 on the coordination of procedures for the award of certain works contracts, supply contracts and service contracts by contracting authorities or entities in the fields of defence and security, and amending Directives 2004/17/EC and 2004/18/EC (Text with EEA relevance)*

Article 15
European Partnerships

The Programme may be implemented through European Partnerships ***established in accordance with Horizon Europe Regulation and within the Strategic planning process between the European Commission and the Member States***. This may include in particular contributions to existing or new public-private partnerships in the form of joint undertakings established under Article 187 TFEU. For these contributions, provisions relating to European Partnerships under [Horizon Europe Regulation, ref to be added] apply.

Article 16
Digital Innovation Hubs

1. 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, without prejudice to paragraphs 2 and 3***, shall be established.
2. For the purpose of the establishment of the network mentioned in paragraph 1, 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.*** ■

3. The Commission, shall adopt a decision on the selection of entities forming the initial network ***in accordance with the procedure referred to in Article 27a(2) taking utmost account of the opinion of each Member State before the selection of a European Digital Innovation Hub in its territory.*** These entities shall be selected by the Commission from candidate entities designated by Member States on the basis of the criteria mentioned in paragraph 2 and the following additional criteria:
 - (a) the budget available for the financing of the initial network;
 - (b) the need to ensure by the initial network a coverage of the needs of industry and areas of public interest and a comprehensive and balanced geographical coverage, ***improving convergence between cohesion countries and the other Member States e.g. bridging the digital divide in geographical terms.***
4. ***Following an open and competitive process, the Commission, taking utmost account of the opinion of each Member State before the selection of a European Digital Innovation Hub in its territory, shall select, if needed, additional European Digital Innovation Hubs in accordance with the procedure referred to in Article 27a(2), in such a way to ensure a broad geographical coverage across Europe. The number of entities of the network shall meet the demand for the hub's services in given Member States. To address the specific constraints faced by the EU outermost regions, specific entities may be nominated to cover their needs.***
 - 4a. ***European Digital Innovation Hubs shall have substantial overall autonomy to define their organisation, composition, and working methods.***
5. The ***European Digital Innovation Hubs*** shall be involved in the implementation of the Programme ***by performing the following functions to the benefit of the Union industry, notably SMEs and midcaps, as well as the public sector:***
 - (a) ***raise awareness and provide, or ensure access to, digital transformation expertise, know-how and services, including testing and experimentation facilities*** ;

- (aa) *support companies, especially SMEs and start-ups, organisations to become more competitive and improve their business models through use of new technologies covered by the Programme;*
- (b) *facilitate the transfer of expertise and know-how between regions, in particular by networking SMEs, start-ups and midcaps established in one region with European Digital Innovation Hubs established in other regions which are best suited to provide relevant services; encourage exchanges of skills, joint initiatives and good practices;*
- (c) provide, *or ensure access to*, thematic services, including *in particular* services related to artificial intelligence, high performance computing and cybersecurity and trust to the administrations, public sector organisations, SMEs *or* midcaps. *European* Digital Innovation Hubs may specialise in specific thematic services and do not need to provide all thematic services *or provide those services to all categories of entities* mentioned in this paragraph;
- (d) provide financial support to third parties under the specific objective 4, Advanced Digital Skills.

6. *Where a European Digital Innovation Hub receives funding under this programme, the funding shall be in the form of grants.*

CHAPTER II ELIGIBILITY

Article 17

Eligible actions

1. Only actions contributing to the achievement of the objectives referred to in Article 3 and Articles 4 - 8 shall be eligible for funding.
2. The eligibility criteria for the actions shall be set out in the work programmes.

Article 18

Eligible entities

1. The following *legal* entities shall be eligible:
- (a) legal entities established in:
 - (i) a Member State or an overseas country or territory linked to it
 - (ii) third countries associated with the Programme *in accordance with articles 10 and 12*;
 - (b) any legal entity created under Union law or any international organisation.
2. Legal entities established in a third country which is not associated to the Programme are exceptionally eligible to participate in specific actions where this is necessary for the achievement of the objectives of the Programme. ***Such entities shall bear the cost of their participation unless specified otherwise in the work programmes.***
3. Natural persons shall not be eligible, except for grants awarded under Specific Objective 4. Advanced digital skills.
4. The work programme *referred to in Article 23* may provide that participation is limited to beneficiaries established in Member States only, or to beneficiaries established in Member States and specified associated or other third countries for security reasons or actions directly related to EU strategic autonomy. ***Any limitation of the participation of legal entities established in associated countries shall be in accordance with this Regulation and with the terms and conditions of the relevant Agreement.***

CHAPTER III

GRANTS

Article 19

Grants

Grants under the Programme shall be awarded and managed in accordance with Title VIII of the Financial Regulation ***and may cover up to 100% of the eligible costs, without prejudice***

to the co-financing principle as laid down in Art. 190 of the Financial Regulation; and in accordance with the specification under each objective.

Article 20

Award criteria

1. The award criteria shall be defined in the work programmes and in the calls for proposals, taking into account at *least* the following elements:
 - (a) the maturity of the action in the project development;
 - (b) the soundness of the implementation plan proposed;
 -
 - (c) the need to overcome financial obstacles such as the lack of market finance.
2. *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 divide and 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.*

Article 20a

Evaluation

In accordance with Article 150 of the Financial Regulation, applications for grants shall be evaluated by an evaluation committee which may be fully or partially composed of external independent experts.

CHAPTER IV
BLENDING OPERATIONS AND OTHER COMBINED FUNDING

Article 21
Blending operations

Blending operations decided under this Programme shall be implemented in accordance with the InvestEU regulation and Title X of the Financial Regulation.

Article 22
Cumulative, complementary and combined funding

1. An action that has received a contribution from another Union programme, ***including funds under shared management***, may also receive a contribution under the Programme, provided that the contributions do not cover the same costs. The rules of each contributing Union programme shall apply to its respective contribution to the action. The cumulative funding shall not exceed the total eligible costs of the action and the support from the different Union programmes may be calculated on a pro-rata basis in accordance with the documents setting out the conditions for support.

2. Actions awarded a Seal of Excellence certification, or which comply with the following cumulative, comparative conditions:

- (a) they have been assessed in a call for proposals under the Programme;
- (b) they comply with the minimum quality requirements of that call for proposals;
- (c) they may not be financed under that call for proposals due to budgetary constraints.

may receive support from the European Regional Development Fund, the Cohesion Fund, the European Social Fund+ or the European Agricultural Fund for Rural Development, in accordance with paragraph 5 of Article [67] of Regulation (EU) XX [Common Provisions Regulation] and Article [8] or Regulation (EU) XX [Financing, management and monitoring of the Common Agricultural Policy], provided that such actions are consistent with the objectives of the programme concerned. The rules of the Fund providing support shall apply.

2a. Where an action has already been awarded or has received contributions from another Union programme or support from an EU fund, that contribution or support shall be listed in the application for a contribution under the Programme.

CHAPTER V

PROGRAMMING, MONITORING, EVALUATION AND CONTROL

Article 23

Work programmes

1. The Programme shall be implemented by work programmes referred to in Article 110 of Financial Regulation.

2. Those work programmes shall be adopted as multiannual programmes for the entire Programme. If justified by specific implementation needs, they may also be adopted as annual programmes which cover one or more Specific Objectives.

3. The work programmes shall focus on the activities set out in the Annex I and ensure that the actions thereby supported do not crowd out private financing.

3a. The Commission shall be empowered to adopt delegated acts in accordance with Article 27 to amend Annex I to review or complement the activities set out therein in a manner consistent with the objectives of this Regulation as set out in articles 4 - 8.

4. Work programmes shall set out, where applicable, the overall amount reserved for blending operations.

Article 24

Monitoring and reporting

1. Measurable indicators to monitor the implementation and progress of the Programme in achieving the general and specific objectives set out in Article 3 are set in the Annex II.

- 1a. ***The Commission shall define a methodology to provide for indicators for an accurate assessment of the progress towards achieving the general objectives set out in Article 3(1).***
2. To ensure effective assessment of progress of the Programme towards the achievement of its objectives, the Commission is empowered to adopt delegated acts in accordance with Article 27 to amend Annex II to review or complement the ***measurable*** indicators where considered necessary and to supplement this Regulation with provisions on the establishment of a monitoring and evaluation framework.
3. The performance reporting system shall ensure that data for monitoring programme implementation **■** are collected efficiently, effectively, and in a timely manner ***so that the results are suitable for an in-depth analysis of the progress achieved and the difficulties encountered.*** To that end, proportionate reporting requirements shall be imposed on recipients of Union funds and Member States.
4. Official EU statistics such as regular ICT statistical surveys shall be used to their maximum ***as context indicators.*** National Statistical Institutes shall be consulted on, and involved together with Eurostat, in the initial design and subsequent development of statistical indicators used for monitoring the implementation of the programme and the progress made with regard to digital transformation.

Article 25

Programme evaluation

1. Evaluations shall be carried out in a timely manner to feed into the decision-making process. ***They shall contain a qualitative assessment of the progress towards achieving the general objectives of the programme.***
2. ***In addition to regularly monitoring the Programme, the Commission shall conduct an*** interim evaluation of the Programme ***which*** shall be performed once there is sufficient information available about the implementation of the Programme, but no later than four years after the start of the implementation of the Programme. ***The interim evaluation shall form the basis to adjust programme implementation, as appropriate, also taking into account new relevant technological developments.***

The interim evaluation shall be submitted to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions

3. At the end of the implementation of the Programme, but no later than four years after the end of the period specified in Article 11, a final evaluation of the Programme shall be carried out by the Commission.

The final evaluation shall assess longer-term impacts of the Programme and its sustainability.

4. The evaluation reporting system shall ensure that data for programme evaluation are collected efficiently, effectively, in a timely manner and at the appropriate level of granularity by recipients of Union funds;
 - 4a. ***The Commission shall submit the final evaluation report referred to in paragraph 3 to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions.***

■

Article 26

Audits

1. Audits on the use of the Union contribution carried out by persons or entities, including by others than those mandated by the Union Institutions or bodies, shall form the basis of the overall assurance pursuant to Article 127 of the Financial Regulation.
2. The control system shall ensure an appropriate balance between trust and control, taking into account administrative costs and other costs of controls at all levels.
3. Audits of expenditure shall be carried out in a consistent manner in accordance with the principles of economy, efficiency and effectiveness.
4. As part of the control system, the audit strategy may be based on the financial audit of a representative sample of expenditure. That representative sample shall be

complemented by a selection based on an assessment of the risks related to expenditure.

5. Actions that receive cumulative funding from different Union programmes shall be audited only once, covering all involved programmes and their respective applicable rules.

Article 27

Exercise of the delegation

1. The power to adopt delegated acts is conferred on the Commission subject to the conditions laid down in this Article.
2. The power to adopt delegated acts referred to in *Articles 23 and 24* shall be conferred on the Commission until 31 December 2028.
3. The delegation of power referred to in *Articles 23 and 24* may be revoked at any time by the European Parliament or by the Council. A decision to revoke shall put an end to the delegation of power specified in that decision. It shall take effect the day following the publication of the decision in the Official Journal of the European Union or at a later date specified therein. It shall not affect the validity of any delegated acts already in force.
4. Before adopting a delegated act, the Commission shall consult experts designated by each Member State in accordance with the principles laid down in the Interinstitutional Agreement on Better Law-Making of 13 April 2016.
5. As soon as it adopts a delegated act, the Commission shall notify it simultaneously to the European Parliament and to the Council.
6. A delegated act adopted pursuant to *Articles 23 and 24* shall enter into force if no objection has been expressed either by the European Parliament or by the Council within a period of two months of notification of that act to the European Parliament and the Council or if, before the expiry of that period, the European Parliament and the Council have both informed the Commission that they will not object. That period shall be extended by two months at the initiative of the European Parliament or of the Council.

Article 27a
Committee procedure

1. *The Commission shall be assisted by the Digital Europe Programme Coordination Committee. That committee shall be a committee within the meaning of Regulation (EU) No 182/2011.*
2. *Where reference is made to this paragraph, Article 5 of Regulation (EU) No 182/2011 shall apply.*

Article 28

Protection of the financial interests of the Union

Where a third country participates in the programme by a decision under an international agreement or by virtue of any other legal instrument, the third country shall grant the necessary rights and access required for the authorizing officer responsible, the European Anti-Fraud Office (OLAF), the European Court of Auditors to comprehensively exert their respective competences. In the case of OLAF, such rights shall include the right to carry out investigations, including on-the-spot checks and inspections, provided for in Regulation (EU, Euratom) No 883/2013 of the European Parliament and of the Council concerning investigations conducted by the European Anti-Fraud Office (OLAF).

CHAPTER VI
TRANSITIONAL AND FINAL PROVISIONS

Article 29

Information, communication, publicity, policy support and dissemination

1. The recipients of Union funding shall acknowledge the origin and ensure the visibility of the Union funding (in particular when promoting the actions and their results) by providing coherent, effective and proportionate targeted information to multiple audiences, including the media and the public.
2. The Commission shall implement information and communication actions relating to the Programme, and its actions and results. ***It shall also ensure integrated information and reach to potential applicants to Union funding in the digital sector.*** Financial resources allocated to the Programme shall also contribute to the

corporate communication of the political priorities of the Union, as far as they are related to the objectives referred to in Article 3.

3. The Programme shall provide support to policy development, outreach, awareness-raising and the dissemination of activities and promote cooperation and the exchange of experience in the areas mentioned in Articles 4 to 8.

Article 30

Repeal

Decision (EU) 2015/2240 of the European Parliament and of the Council of 25 November 2015 establishing a programme on interoperability solutions and common frameworks for European public administrations, businesses and citizens (ISA2 Programme) as a means for modernising the public sector is repealed with effect from 1 January 2021.

Article 31

Transitional provisions

1. This Regulation shall not affect the continuation or modification of the actions concerned, until their closure, under Regulation (EU) No 283/2014 of the European Parliament and of the Council³⁷ and under Decision (EU) 2015/2240³⁸, which shall continue to apply to the actions concerned until their closure.
2. The financial envelope for the Programme may also cover technical and administrative assistance expenses necessary to ensure the transition between the Programme and the measures adopted under Regulation (EU) No 283/2014 and under Decision (EU) 2015/2240³⁹.

³⁷ Regulation (EU) No 283/2014 of the European Parliament and of the Council of 11 March 2014 on guidelines for trans-European networks in the area of telecommunications infrastructure and repealing Decision No 1336/97/EC (OJ L 86, 21.3.2014, p. 14).

³⁸ Decision (EU) 2015/2240 of the European Parliament and of the Council of 25 November 2015 establishing a programme on interoperability solutions and common frameworks for European public administrations, businesses and citizens (ISA2 programme) as a means for modernising the public sector.

³⁹ Decision (EU) 2015/2240 of the European Parliament and of the Council of 25 November 2015 establishing a programme on interoperability solutions and common frameworks for European public administrations, businesses and citizens (ISA2

3. Where necessary, appropriations may be entered in the budget beyond 2027 to cover the expenses referred to in Article 9(4) in order to enable the management of actions not completed by 31 December 2027.

Article 32

Entry into force

■ This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels,

programme) as a means for modernising the public sector.

ANNEX 1

ACTIVITIES

Technical description of the programme: initial scope of activities

The initial activities of the Programme shall be implemented in accordance with the following technical description:

Specific Objective 1. High Performance Computing

The Programme shall implement the European strategy on HPC by supporting a full EU ecosystem that provides the necessary HPC and data capabilities for Europe to compete globally. The strategy aims to deploy a world-class HPC and data infrastructure with exascale capabilities by 2022/2023, and post exascale facilities by 2026/27, endowing the Union with its own independent and competitive HPC technology supply, achieving excellence in HPC applications and widening HPC availability and use.

Initial activities shall include:

1. A joint procurement framework *enabling a co-design approach for the acquisition of* for an integrated network of world-class HPC including exascale (*executing ten to the power of eighteen operations per second*) supercomputing and data infrastructure. It will be *easily* accessible ■ to public and private users *notably SMEs, irrespective of which Member State they are located in*, and ■ for research purposes, *in accordance with the {Regulation establishing the European High Performance Computing Joint Undertaking}*.
2. A joint procurement framework of a post-exascale (*executing ten to the power of twenty-one operations per second*) supercomputing infrastructure, including the integration with quantum computing technologies.
3. EU-level coordination and adequate financial resources to support the development, procurement and operation of such infrastructure.

4. Networking of Member State HPC and data capacities and support for Member States wishing to upgrade or acquire new HPC capacities.
5. Networking of HPC Competence Centres, **at least** one per Member State and associated with their national supercomputing centres to provide HPC services to industry (in particular SMEs), academia and public administrations.
6. The deployment of ready to use/operational technology: supercomputing as a service resulting from R&I to build an integrated European HPC ecosystem, covering all scientific and industrial value chain segments (hardware, software, applications, services, interconnections and advanced digital skills).

Specific Objective 2. Artificial Intelligence

The Programme shall build up and strengthen core Artificial Intelligence capacities in Europe including data resources and repositories of algorithms and making them accessible by all businesses and public administrations as well as reinforcement and networking of existing **and newly established** AI testing and experimentation facilities in Member States.

Initial activities shall include:

1. Creation of Common European Data spaces that aggregate public information across Europe, **including from the re-use of Public Sector Information**, and become a data input source for AI solutions. The spaces would **■** be open to public and private sector. For increased usage, data within a space should be made interoperable, **notably through data formats that would be open, machine readable, standardized and documented**, both in the interactions between public and private sectors, within sectors and across sectors (semantic interoperability).
2. Development of common European **libraries or interfaces to** libraries of algorithms that would be **easily** accessible to all **based on fair, reasonable and non-discriminatory terms**. Companies and public sector would be able to identify and acquire whichever solution would work best for their needs.
3. Co-investment with Member States in world class reference sites for experimentation and testing in real setting focusing on the applications of AI in essential sectors such as health, earth/environment monitoring, **transport and** mobility, security, manufacturing

or finance, as well as in other areas of public interest. The sites should be open to all actors across Europe and connected to the Network of Digital Innovation Hubs. They should be equipped with *or connected to* large computing and data handling facilities as well as latest AI technologies including emerging areas *inter alia* neuromorphic computing, deep learning and robotics.

Specific Objective 3. Cybersecurity and trust

The Programme shall stimulate the *reinforcement*, building *and acquisition* of essential capacities to secure the EU's digital economy, society and democracy by reinforcing the EU's cybersecurity industrial potential and competitiveness, as well as improving capabilities of both private and public sectors to protect European citizens and businesses from cyber threats, including supporting the implementation of the Network and Information Security Directive.

Initial activities, under this objective, shall include:

1. Co-investment with Member States in advanced cybersecurity equipment, infrastructures and know-how that are essential to protect critical infrastructures and the DSM at large. This could include investments in quantum facilities and data resources for cybersecurity, situational awareness in cyberspace as well as other tools to be made available to public and private sector across Europe.
2. Scaling up existing technological capacities and networking the competence centres in Member States and making sure that these capacities respond to public sector needs and industry, including in products and services that reinforce cybersecurity and trust within the DSM.
3. Ensuring wide deployment of *effective state of the art* cybersecurity and trust solutions across the Member States. This includes *strengthening* security and safety *of* products, *from their design to their commercialisation*.
4. Support to close the cybersecurity skills gap by e.g. aligning cybersecurity skills programmes, adapting them to specific sectorial needs and facilitating access to targeted specialised training courses.

Specific Objective 4. Advanced Digital skills

The Programme shall support *training opportunities on* advanced digital skills, notably in HPC, *big data analytics*, AI, distributed ledgers (e.g. blockchain) and cybersecurity for the current and future *work* force by offering *inter alia* students, recent graduates *or citizens of all ages in need of upskilling*, and *current* workers, wherever they are situated, with the means to acquire and develop these skills.

Initial activities shall include:

1. Access to on the job training by taking part in traineeships in competence centres and companies *and other organisations* deploying advanced *digital* technologies.
2. Access to courses in advanced digital technologies which will be offered by *higher education institutions, research institutions and industry professional certification bodies* in cooperation with the bodies involved in the Programme (topics *are expected to* include AI, cybersecurity, distributed ledgers (e.g. blockchain), HPC and quantum technologies).
3. Participation in short-term, specialised professional training courses that have been pre-certified, for example in the area of cybersecurity.

Interventions shall focus on *advanced* digital skills related to specific technologies.

The European Digital Innovation Hubs, as defined in Article 16, *shall act as facilitators for training opportunities, liaising with education and training providers.*

Specific Objective 5. Deployment, best use of digital capacities and Interoperability

I. Initial activities related to the digital transformation of areas of public interest shall include:

Projects serving the deployment, the best use of digital capacities or interoperability shall constitute projects of common interest.

1. *Modernisation of public administrations:*

- 1.1. Support Member States in the implementation of the Principles of the Tallinn Declaration on e-Government in all policy domains, creating where necessary, the

registries needed and interconnecting them in full respect of the General Data Protection Regulation.

- 1.2. Support the design, piloting, deployment, maintenance, **evolution** and promotion of a coherent eco-system of cross-border digital services infrastructure and facilitate seamless end-to-end, secure, interoperable, multi-lingual, interoperable cross-border or cross-sector solutions and common frameworks within public administration. Methodologies for assessing the impact and benefits shall also be included.
- 1.3. Support the assessment, updating and promotion of existing common specifications and standards as well as the development, establishment and promotion of new common specifications, open specifications and standards through the Union's standardisation platforms and in cooperation with European or international standardisation organisations as appropriate.
- 1.4. Cooperate towards a European ecosystem for trusted infrastructures **possibly** using distributed ledgers (e.g. blockchain) services and applications, including support for interoperability and standardisation and fostering the deployment of EU cross-border applications.

2. *Health*⁴⁰

- 2.1. Ensure that EU citizens **have control over their personal data and** can access, share, use, and manage their personal health data **across borders *securely and in a way that guarantees their privacy*** irrespective of their location or the location of the data, **in accordance with applicable data protection legislation**. Complete the eHealth Digital Service Infrastructure and extend it by new digital services, **related to disease prevention, health and care**, support **their** deployment, **building on a broad support by EU activities and Member States, in particular in the eHealth Network according to Article 14 of Directive 2011/24/EU**.
- 2.2. Make available better data for research, disease prevention and personalised health and care. Ensure that European health researchers and clinical practitioners have access to necessary scale of resources (shared data spaces, **including data storage and**

⁴⁰ COM(2018) 233 final, on enabling the digital transformation of health and care in the Digital Single Market; empowering citizens and building a healthier society

computing, expertise and analytical capacities) to achieve breakthroughs in major as well as in rare diseases. The target is to ensure a population-based cohort of at least 10 million citizens. ■

- 2.3. Make digital tools available for citizen empowerment and for person-centred care by supporting the exchange of innovative and best practices in digital health, capacity building and technical assistance, in particular for cybersecurity, AI and HPC.
3. *Judiciary*: Enable seamless and secure cross-border electronic communication within the judiciary and between the judiciary and other competent bodies in the area of civil and criminal justice. Improve access to justice and juridical information and procedures to citizens, businesses, legal practitioners and members of the judiciary with semantically interoperable interconnections to ■ databases and registers as well as facilitating the out-of-court dispute resolution online. Promote the development and implementation of innovative technologies for courts and *the legal profession* based *inter alia* on artificial intelligence solutions which are likely to streamline and speed-up procedures (for example “legal tech” applications).
4. *Transport, mobility, energy and environment*: Deploy decentralised solutions and infrastructures required for large-scale digital applications such as *connected automated driving, Unmanned Aerial Vehicles, smart mobility concepts*, smart cities, smart rural areas *or outermost regions* in support of transport, energy and environmental policies, *in coordination with the actions for digitalizing the transport and energy sectors under Connecting Europe Facility*.
5. *Education, culture and media*: Provide creators, creative industry *and cultural sectors* in Europe with access to latest digital technologies from AI to advanced computing. Exploit the European cultural heritage, *including Europeana*, to *support education and research and to* promote cultural diversity, social cohesion and European *society*. Support the uptake of digital technologies in education *as well as private and publicly funded cultural institutions*.
-
6. *Other activities supporting the Digital Single Market, for example fostering digital and media* literacy and *raising* awareness ■ among minors, parents and teachers regarding

risks minors may encounter online and ways to protect them, **tackling cyberbullying and** the dissemination of child sexual abuse material online **by supporting a pan-European network of Safer Internet Centres**; **promoting** measures aimed at **detecting and** combatting intentional disinformation spread, **thereby increasing the Union's overall resilience**; **supporting** an EU observatory for the digital platform economy as well as studies and outreach activities.

Activities referred to in points 1 to 6 may be partly supported by European Digital Innovation Hubs through the same capacities developed to assist the industry with their digital transformation (see point II).

II Initial activities related to the digitisation of industry:

1. Contribution to the upscaling of the **■** network of **European** Digital Innovation Hubs to ensure access to digital capacities to any business, notably SMEs in any region across the EU. This includes notably:
 - 1.1. Access to Common European Data space and AI platforms and European HPC facilities for data analytics and compute intensive applications
 - 1.2. Access to AI large scale testing facilities and to advanced cybersecurity tools
 - 1.3. Access to advanced **digital** skills
2. Activities will be coordinated with, and will complement the innovation actions in digital technologies supported notably under the Horizon Europe Programme as well as investments in **European** Digital Innovation Hubs supported under the European Regional and Development Funds. Grants for market replication may also be provided from the Digital Europe Programme in line with state aid rules. Support for access to finance further steps in their digital transformation will be achieved with financial instruments making use of the InvestEU scheme.

ANNEX 2

Performance indicators

Specific Objective 1 - High-performance computing

- 1.1 Number of HPC infrastructures jointly procured
- 1.2 Usage of the exascale and post-exascale computers in total and by various stakeholder groups (universities, SMEs etc.)

Specific Objective 2 - Artificial intelligence

- 2.1 Total amount co-invested in sites for experimentation and testing
- 2.2 *Usage of common European libraries or interfaces to libraries of algorithms, usage of Common European Data Spaces and usage of sites for experimentation and testing related to activities under this regulation*
- 2.2a *Number of cases for which organisations decide to integrate artificial intelligence in their product, processes or services, as a result of the Programme*

Specific Objective 3 - Cybersecurity & Trust

- 3.1 Number of cybersecurity infrastructure and/or tools jointly procured.
- 3.2 Number of users and user communities getting access to European cybersecurity facilities

Specific Objective 4 - Advanced digital skills

- 4.1 Number of *persons who have received training to acquire advanced digital skills supported by the Programme*
- 4.2 Number of enterprises, *in particular SMEs*, having difficulty recruiting ICT specialists
- 4.2b *Number of people reporting improved employment situation after the end of the training supported by the Programme*

Specific Objective 5 - Deployment, best use of digital capacity and interoperability

- 5.1 Take-up of digital public services
- 5.2 Enterprises with high digital intensity score

5.3 ***Extent of alignment*** of the National Interoperability Framework with the European Interoperability Framework

5.4 ***Number of businesses and public sector entities which have used the European Digital Innovation Hubs' services***

ANNEX 3

Synergies with other Union programmes

1. Synergies with Horizon Europe shall ensure that:
 - (a) Whereas several thematic areas addressed by Digital Europe and Horizon Europe converge, the type of actions to be supported, their expected outputs and their intervention logic are different and complementary;
 - (b) Horizon Europe will provide extensive support to research, technological development, demonstration, piloting, proof-of-concept, testing and innovation including pre-commercial deployment of innovative digital technologies, in particular through (i) a dedicated budget in the Global Challenges pillar for "Digital and industry" to develop enabling technologies (Artificial Intelligence and Robotics, Next Generation Internet, High Performance Computing and Big Data, Key Digital Technologies, combining digital with other technologies); (ii) support to e-Infrastructures under the Open Science pillar; (iii) the integration of digital across all the Global Challenges (health, security, energy and mobility, climate, etc.); and (iv) support for scale-up breakthrough innovations under the Open Innovation pillar (many of which will combine digital and physical technologies);
 - (c) Digital Europe will invest in (i) digital capacity building in High Performance Computing, Artificial Intelligence, ***distributed ledger technology*** Cybersecurity and advanced digital skills; and (ii) national, regional ***and local*** deployment within an EU framework of digital capacities and the latest digital technologies in areas of public interest (such as health, public administration, justice and education) or market failure (such as the digitisation of businesses, notably small and medium enterprises);

- (d) Digital Europe capacities and infrastructures are made available to the research and innovation community, including for activities supported through Horizon Europe including testing, experimentation and demonstration across all sectors and disciplines;
 - (e) As the development of novel digital technologies matures through Horizon Europe, these will progressively be taken up and deployed by Digital Europe;
 - (f) Horizon Europe initiatives for the development of skills and competencies curricula, including those delivered at the co-location centres of the European Institute of Innovation and Technology's KIC-Digital, are complemented by Digital Europe-supported capacity-building in advanced digital skills;
 - (g) Strong coordination mechanisms for programming and implementation, are put in place, aligning all procedures for both programmes to the extent possible. Their governance structures will involve all Commission concerned services.
2. Synergies with Union programmes under shared management, including the European Regional Development Fund (ERDF), the European Social Fund Plus (ESF+), the European Agricultural Fund for Rural Development (EAFRD) and European Maritime and Fisheries Fund (EMFF), shall ensure that:
- (a) Arrangements for complementary funding from Union programmes under shared management and the Digital Europe Programme are used to support activities providing a bridge between smart specialisations and support to the digital transformation of the European economy *and society*.
 - (b) The ERDF contributes to the development and strengthening of regional and local innovation ecosystems, industrial transformation *as well as digital transformation of society and of public administration, thus stimulating also the implementation of the Tallinn Declaration on eGovernment*. This includes support to digitization of industry and take-up of results as well as the rolling out of novel technologies and innovative solutions. The Digital Europe programme will complement and support the trans-national networking and mapping of digital capacities to make them accessible to SMEs and to make interoperable IT solutions accessible to all EU regions.

3. Synergies with the Connecting Europe Facility (CEF) shall ensure that:
 - (a) The future DEP focuses on large-scale digital capacity and infrastructure building in High Performance Computing, Artificial Intelligence, Cybersecurity and advanced digital skills aiming at wide uptake and deployment across Europe of critical existing or tested innovative digital solutions within an EU framework in areas of public interest or market failure. DEP is mainly implemented through coordinated and strategic investments with Member States, notably through joint public procurement, in digital capacities to be shared across Europe and in EU-wide actions that support interoperability and standardisation as part of developing a Digital Single Market.
 - (b) Digital Europe capacities and infrastructures are made available to the deployment of innovative new technologies and solutions in the field of mobility and transport. The CEF supports the roll-out and deployment of innovative new technologies and solutions in the field of mobility and transport.
 - (c) Coordination mechanisms will be established in particular through appropriate governance structures.
4. Synergies with InvestEU shall ensure that:
 - (a) Support through market-based financing, including pursuing policy objectives under this Programme will be provided under the InvestEU Fund Regulation. Such market-based financing might be combined with the grant support.
 - (b) Access to financial instruments by companies will be facilitated by the support provided by Digital Innovation Hubs.
5. Synergies with Erasmus+ shall ensure that:
 - (a) The Programme will support the development and acquisition of the advanced digital skills needed for the deployment of cutting-edge technologies such as artificial intelligence or high-performance computing, in cooperation with relevant industries.

- (b) The advanced skills part of Erasmus+ will complement the interventions of Digital Europe addressing the acquisition of skills in all domains and at all levels, through mobility experiences.

5a. Synergies with Creative Europe shall ensure that:

- (a) *the MEDIA sub-programme of Creative Europe supports initiatives that can generate real impact for cultural and creative sectors across Europe, helping their adaptation to the digital transformation.*
- (b) *Digital Europe Programme inter alia provides creators, creative industry and cultural sector in Europe with access to latest digital technologies from AI to advanced computing.*

6. Synergies with other EU Programmes and Initiatives on Competences/Skills shall be ensured.

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