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2018/0227 (COD)

Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

establishing the Digital Europe programme for the period 2021-2027

{SEC(2018) 289 final} - {SWD(2018) 305 final} - {SWD(2018) 306 final}

EXPLANATORY MEMORANDUM

CONTEXT OF THE PROPOSAL

This proposal provides for a date of application as of 1 January 2021.

- **Reasons and objectives**

The digital transformation impacts all sectors of the economy and transforms the way we live, work and communicate. Much as our transport, industrial infrastructure, education and high quality public services have ensured Europe's prosperity in the past, investments in strategic digital capacities and infrastructures, upskilling and modernising the interaction between governments and citizens will underpin our future prosperity.

The current EU investment framework covers important aspects of these pillars and notably research and innovation.¹ However, lessons learnt from successful public policies for high tech areas show that, in addition to research and innovation, public action to support "upstream input" in rapidly developing technology fields can be instrumental for generating value while addressing public sector needs.

This is indeed the case for the key areas that underpin the digital transformation of the economy and society for the next ten years at least, i.e. advanced computing and data handling, cybersecurity, and artificial intelligence. Investment in acquiring the most advanced capacities in these fields, ensuring their best use in an interoperable way across the EU and acquiring the skills needed to develop and use them will provide an essential boost to the digital transformation of our areas of public interest and our industry.

In Europe, an upstream investment gap, in addition to research and innovation, is evident from the mismatch between the growing demand for latest technology and the supply. In high performance computing, insufficient supply is pushing EU scientists and engineers to turn massively to computing resources outside Europe notably to the United States of America where government programmes maintain supply for high end computing at the frontier of performance².

Europe is also home to a world-leading artificial intelligence research community as well as a host of small companies providing artificial intelligence expertise, but its artificial intelligence market is underdeveloped compared to the US, where the capacities available notably in data provide the conditions for innovation at scale.

The fragmentation and relatively low public investment in cybersecurity³ is putting our society and economy at risk while the European cyber industry remains highly dispersed, with no major market players⁴. Highly skilled technical expert jobs in areas such as artificial intelligence, data analytics and cybersecurity go unfilled - there are currently more than 350,000 EU vacancies in these fields.⁵

¹ Support for research and innovation in next generation technologies and applications, support for digital infrastructure projects under the CEF and support for Media under the Creative Europe Programme.

² The EU currently consumes one third of high performance computing resources worldwide, but provides only around 5% (European Parliamentary Research Service (2017) Developing Supercomputers in Europe, p.3).

³ Current public investment in EU in cybersecurity is estimated to be between 1 and 2 B€ per year while investments in the US are almost ten times higher.

⁴ Building an Effective European Cyber Shield, EPSC, 2017. The same report mentions that the dominance of the US is partly the result of a cybersecurity investment strategy that saw federal funding raised to 19 billion US dollars in 2017 – a 35% increase compared to 2016.

⁵ An analysis of vacancies in 7 EU Member States by Victory Database.

The Digital Single Market (DSM) Strategy has put in place a robust framework, which must now be matched by an equally robust investment programme. This has been endorsed at the highest political level. In Tallinn, European Heads of State and Government identified the main pillars of a strong digital economy: cybersecurity, artificial intelligence, a world class infrastructure that includes high performance computing, digital skills, and the digital transformation of the public sector.⁶ This was reflected in the October 2017 European Council Conclusions. Since then, several Council formations have discussed the issue of strong digital capacity building in the EU. In the Multiannual Financial Framework Communication⁷, the Commission highlighted the scenario of **doubling the investments** in digital.

This Memorandum accompanies the proposal for a **Regulation of the European Parliament and Council on a new programme dedicated to increasing and maximising the benefits of the digital transformation for all European citizens, public administrations and businesses** (Digital Europe programme).

The Digital Europe programme is a central element of the Commission's comprehensive response to the challenge of digital transformation, part of the Multiannual Financial Framework (MFF) proposal for 2021-2027. Its aim is to provide a spending instrument that is tailored to the operational requirements of capacity building in the areas identified by the European Council, and to exploit the synergies between them.

It will therefore focus on reinforcing Europe's capacities in **high performance computing, artificial intelligence, cybersecurity and advanced digital skills⁸ and ensuring their wide use across the economy and society**. Fostered simultaneously, these will help create a thriving data economy, promote inclusiveness and ensure value creation.⁹ Ignoring or weakening one of the pillars will undermine the whole construction as they are closely interlinked and interdependent: for instance, artificial intelligence needs cybersecurity to be trustable, cybersecurity needs high performance computing to process the massive amount of data to be secured, digital services up to future standards need all three capacities; finally, all the above need the right advanced skills. Most importantly, the programme will concentrate on the areas where no single Member State alone can ensure the level required for digital success. Focus will also be placed on those areas where public spending has the highest impact, notably on improving efficiency and quality of services in the **areas of public interest** such as health, justice, consumer protection and public administrations, and helping small and medium-sized enterprises (SMEs) in adapt to digital change.

The programme will also consider the added value of combining digital with other enabling technologies in order to maximize benefits from digitisation.

The programme will aim to:

- Build-up and strengthen the EU's **high performance computing** (HPC) and data processing capacities, and ensure their wide use both in areas of public interest such as health, environment and security, and by industry, notably SMEs.
- Build-up and reinforce core **artificial intelligence** (AI) capacities such as a data resources and libraries of artificial intelligence algorithms and make them accessible to all

⁶ Tallinn Digital Summit, Conclusions of the Prime Minister of Estonia, Juri Ratas.

⁷ COM (2018)98: A new, modern Multiannual Financial Framework for a European Union that delivers efficiently on its priorities post-2020.

⁸ In the context of this programme, advanced digital skills are defined in Article 2 (e) notably as specialised skills in the area of high performance computing, artificial intelligence and cybersecurity at ISCED level 4 and above.

⁹ For example, deploying eInvoicing across the EU would mean providing digital public services to companies that have the necessary connectivity and skilled workers, while guaranteeing public trust and thus support for the transactions in a secure environment.

businesses and public administrations, as well as reinforce and foster links between existing artificial intelligence testing and experimentation facilities in Member States.

- Ensure that the essential capacities needed to secure the EU's digital economy, society and democracy are present and accessible to the EU's public sector and businesses, and improve the competitiveness of the EU's **cybersecurity** industry.
- Ensure that the current and future labour force can easily acquire **advanced digital skills, notably in high performance computing, artificial intelligence and cybersecurity**, by offering students, graduates, and existing workers the means to acquire and develop these skills, no matter where they are situated.
- Expand the best use of digital capacities, notably high performance computing, artificial intelligence and cybersecurity, across the economy, in areas of public interest and society, including the deployment of **interoperable solutions in areas of public interest** and facilitate access to technology and knowhow **for all businesses, notably SMEs.**
- **Consistency with existing policy provisions**

The Programme will support, inter alia, the policy initiatives announced by the Commission on high performance computing under the Euro HPC initiative¹⁰, FinTech Action Plan of March 2018¹¹, artificial intelligence under the Communication on AI¹², Regulation on promoting fairness and transparency for business users of online intermediation services and a Decision setting up an Observatory on the Online Platform Economy of April 2018¹³, and the data package of April 2018¹⁴, cybersecurity under the cybersecurity package of 15/9/2017¹⁵, digital transformation of health¹⁶ and education¹⁷, the New Industrial Policy Strategy of September 2017¹⁸, the Digitisation of European Industry of April 2016¹⁹ and the Skills Agenda for Europe.

The Programme links to existing investment instruments. Research, Development & Innovation (RDI) investment in digital technologies made under H2020 and previous Framework Programmes have enabled Europe to remain competitive in key sectors e.g. robotics, telecom equipment, and sensor technology. Financing for RDI now needs to be continued and reinforced in the next multiannual financial framework. The Digital Europe programme clearly builds on the successes of the H2020 programme making it possible to move technologies such as high performance computing and artificial intelligence into deployment.

Investments in frameworks, standards, interoperable solutions and pilot cross-border services under the Connecting Europe Facility programme (CEF) and the programme for interoperability solutions and common frameworks for European public administrations, businesses and citizens (ISA²) have enabled public sector administrations to test the digital

¹⁰ Euro HPC initiative

¹¹ COM(2018) 109 final, of 8.3.2018, FinTech Action plan: For a more competitive and innovative European financial sector

¹² Communication of 25/04/2018

¹³ Commission Decision C(2018) 2393 final of 26.4.2018 on setting up the group of experts for the Observatory on the Online Platform Economy

¹⁴ SWD/2018/125 final

¹⁵ COM(2017) 477 final, of 13.9.2017, Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on ENISA, the "EU Cybersecurity Agency", and repealing Regulation (EU) 526/2013, and on Information and Communication Technology cybersecurity certification ("Cybersecurity Act")

¹⁶ COM (2018) 233 final, of 25.4.2018 on enabling the digital transformation of health and care in the Digital Single Market; empowering citizens and building a healthier society

¹⁷ COM(2018) 22 final, of 17.1.2018 on the Digital Education Action Plan

¹⁸ COM(2017) 479 final, of 13.9.2017, Investing in a smart, innovative and sustainable Industry A renewed EU Industrial Policy Strategy Add reference

¹⁹ COM(2016) 180 final, of 19.4.2016, Digitising European Industry Reaping the full benefits of a Digital Single Market

transformation in a 'real' setting and to start the move from eGovernment to digital government²⁰. The deployment of interoperable solutions within the Digital Single Market has shown the value of EU-level action. These are important achievements to build on for wider scale implementation of interoperable digital services across Europe. The programme will build on the achieved Digital Services Infrastructures deployed under the current CEF programme and will support the further evolution and wider implementation of the policy elements such as European Interoperability Framework (EIF).

- **Consistency with other Union policies**

The Digital Europe programme complements and works together with a number of other instruments proposed in the post-2020 multiannual financial framework, notably: Horizon Europe, Connecting Europe Facility (CEF), Creative Europe Programme (including Media), InvestEU Fund, COSME, Single Market Programme, European Regional Development Fund (ERDF), European Social Fund Plus (including Youth Employment Initiative, health strand and basic digital skills), European Agricultural Fund for Rural Development (EAFRD), Erasmus, European Globalisation Adjustment Fund (basic and advanced digital skills), Integrated Border Management Fund, Internal Security Fund, Environment and Climate Action (including Energy Efficiency) and European Maritime and Fisheries Fund.

Synergies between the programmes will allow for economies of scale, make investments more consistent and provide better value for citizens and economics actors. They will amplify the impact of EU-level digital investments on the ground, while national and regional digital investment will be better able to complement the EU-level action.

By increasing the impact and efficiency of public funds through practical linkages between the different programmes, the EU will tackle digital challenges in a more targeted and streamlined way, build or re-inforce ecosystems supporting digitisation, creating more jobs, increasing growth and boosting competitiveness. During the implementation of the Digital Europe programme, attention will be paid to preserving competition within the internal market.

The section below briefly presents the main complementarities and synergies between the Digital Europe programme and the instruments that are most relevant in the digital context, notably Horizon Europe, CEF, ERDF and the EU Values programme as well as the Single Market programme.

Several thematic areas addressed by **Horizon Europe** and the Digital Europe programme overlap in that both will cover high performance computing, artificial intelligence and cybersecurity; the type of actions to be supported, their expected outputs and their intervention logic are different and complementary. Horizon Europe will be the sole centrally-managed EU programme supporting research and technological development and the main programme for demonstration, piloting, proof-of-concept, testing and innovation including pre-commercial deployment. The Digital Europe programme, on the other hand, will focus on large-scale digital capacity and infrastructure building, with the objective of wide uptake and deployment across Europe of critical existing or tested innovative digital solutions.

As an example of their synergies, novel digital technologies developed by Horizon Europe will progressively be taken up and deployed by Digital Europe. By the same token, capacities and infrastructures developed under Digital Europe will be made available to the research and innovation community, including for activities supported through Horizon Europe. Initiatives of Horizon Europe supporting the development of digital skills, including those delivered at

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<http://www.oecd.org/gov/digital-government/Recommendation-digital-government-strategies.pdf>

the co-location centres of the European Institute of Innovation and Technology's EIT Digital, shall be complemented and scaled-up by Digital Europe-supported capacity-building in advanced digital skills. EIT nodes bring together students, researchers, engineers and business developers to co-design and collaborate on the implementation of innovation projects and business creation and support. To ensure strong coordination mechanisms for implementation, the operating procedures for both programmes will be aligned.

The Digital Europe programme complements the actions set in the Digital Education Action Plan, in particular those that require advanced digital skills for the fields of high performance computing, big data analytics, cybersecurity, distributed ledger technologies, robotics and artificial intelligence.

Connecting Europe Facility will provide the physical infrastructure for the high capacity broadband networks necessary to enable the deployment of digital services and technologies proposed in the Digital Europe programme. As CEF will support critical infrastructures across sectors needing the appropriate level of cybersecurity, it will thus rely on the deployments made under Digital Europe. In the future only the Digital Europe programme will support the deployment of digital services in areas of public interest.

The **ERDF** aims to foster the economic, social and territorial cohesion in all EU regions with a focus on less developed regions. The ERDF fosters innovation-led economic development involving the digitisation of industry as set out in the smart specialization strategies²¹ (including complementary investments in building up and improving Digital Innovation Hubs). The ERDF also supports the deployment of digital solutions, including cybersecurity, as part of the delivery on EU priorities in the areas of modernization of public administrations, sustainable transport, improvement of the health and care systems, energy transition, circular economy and education.²² Through this, it contributes to the completion of the Digital Single Market in particular at regional and local levels. Digital Europe will complement local investments to open up facilities for the rest of Europe through networking and mapping of digital capacities.

Furthermore, Digital Europe will indirectly contribute to achieving the objectives of the communication "A stronger and renewed strategic partnership with the EU's outermost regions"²³, which recognises that digital accessibility and skills are key conditions for the development of these regions.

There are clear synergies between the Digital Europe programme and the **Creative Europe** Programme, in particular in its MEDIA and cross-sectoral strands. MEDIA supports targeted actions (e.g. access to content, promotion and audience development) fostering the competitiveness of the cultural and creative sectors, in particular the audiovisual sector and their adaptation to the digital environment. The cross-sectoral strand aims, among other priorities, at a better understanding of the dynamics of digital media and at the digital transformation of the European news media sector. The Digital Europe programme will support these strands by providing wide access to cutting-edge technologies, standards (where needed) and infrastructure necessary for capacity building.

Coherence between the Digital Europe programme and the **Single Market programme** should be sought. For example, consumer protection is to be achieved by design notably when it comes to product safety in relation with the digital economy, cybersecurity and artificial

²¹ COM(2017) 376 final "Strengthening Innovation in Europe's Regions: Strategies for resilient, inclusive and sustainable growth"

²² COM(2018) 372 final "Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the European Regional Development Fund and on the Cohesion Fund" 29 May 2018

²³ COM(2017) 623 final

intelligence. Both programmes should be complementary in considering the entities involved and the type of new risks posed by these emerging technologies. Research into digital markets undertaken from both programmes should also be mutually supportive.

The Digital Europe Programme will promote development of advanced digital skills, focusing on those related to its scope, namely cybersecurity, artificial intelligence and high performance computing. As such it will be complementary to the **European Social Fund Plus**, which will support education and training in the area of basic and medium skills, and **European Global Adjustment Fund**, which will fund IT training for laid off workers across all skills levels.

Synergies and complementarities between the Digital Europe Programme and the **Erasmus** Programme should be ensured to the benefits of both programmes. The Erasmus programme contributes to the development and acquisition of skills through learning mobility and cooperation in the area of education, training, youth and sport.

Finally, as concerns the participation of entities established in non-EU countries, implementation of the Digital Europe programme will be coordinated with external financing instruments such as the Instrument for Pre-Accession and the Neighbourhood, Development and International Cooperation Instrument.

The Commission proposal for the 2021-2027 Multiannual Financial Framework set a more ambitious goal for climate mainstreaming across all EU programmes, with an overall target of 25% of EU expenditure contributing to climate objectives. The contribution of this programme to the achievement of this overall target will be tracked through an EU climate marker system at an appropriate level of disaggregation, including the use of more precise methodologies where these are available. The Commission will continue to present the information annually in terms of commitment appropriations in the context of the annual draft budget.

To support the full utilisation of the potential of the programme to contribute to climate objectives, the Commission will seek to identify relevant actions throughout the programme preparation, implementation, review and evaluation processes.

The Programme's actions should be used 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. This will ensure consistency between the actions of the programme and EU State aid rules, avoiding undue distortions of competition in the internal market.

2. LEGAL BASIS, SUBSIDIARITY AND PROPORTIONALITY

This programme is presented for a Union of 27 Member States, in line with the notification by the United Kingdom of its intention to withdraw from the European Union and Euratom based on Article 50 of the Treaty on European Union received by the European Council on 29 March 2017.

- **Legal basis**

In view of the broad nature of the intervention under the Digital Europe programme, it is based on the following provisions of the Treaty on the Functioning of the European Union (TFEU):

- Article 173(3) TFEU with regard to most of activities undertaken under this Programme;

- Article 172 TFEU, notably with regard to the digital transformation of areas of public interest;
- **Subsidiarity**

The Programme aims to exploit the synergies brought by the sum of essential fundamentals of the digital economy: smart computing and data infrastructure, cybersecurity, artificial intelligence, advanced digital skills and applications in industry and in areas of public interest. Supported under a single coherent mechanism these pillars will lead to a thriving data economy, promote inclusiveness, catalyse innovative projects²⁴ and ensure value distribution.

Digital Europe is a response to a new political will to address cooperatively what were previously mainly domestic concerns as no one Member State or business acting alone can make critical digital investments at the scale required or scale them up to a successful level. **If the EU does not engage, these investments will not happen to the extent needed and the EU risks losing its competitiveness.**

The intervention at the EU level is necessary to plan, jointly finance, and coordinate actions on a scale capable of meeting these challenges, and ensure that the benefits of new digital technologies are fully shared across Europe. Multi-lateral coordinated action can also avoid duplication, capitalise on synergies by linking funding with framework conditions, safeguard interoperability, and avoid blind spots or a major geographical digital divide.

Taken together, this will lead to faster deployment and diffusion of the new technologies, strategic advantages to European businesses, better public services for EU citizens and a greater capacity to achieve breakthroughs in solving societal challenges (health, detection and diagnosis of diseases, climate change, resource efficiency, etc.), generally improving the quality of life in every area throughout the Union.

- **Proportionality**

There is an evident willingness on the part of the public sector to deal with the digital transformation at European level, as well as a willingness to co-invest in building and strengthening the EU's digital capacity. In addition to the strong political support for intervention from the **European Council**, this has also been reflected by the Council and European Parliament, which have repeatedly called for the urgent completion of the Digital Single Market and its individual files.^{25 26 27 28}

The Parliament expressed particular concerns that resources allocated to digital policies in the EU budget were insufficient to make a real impact and recognised the need to boost the European economy through productive investments.^{29 30}

At EU level, in March 2017, 29 countries engaged to cooperate on connected mobility,³¹ and 16 Member States have committed so far to work together and with the Commission to

²⁴ For example, deploying eInvoicing across the EU would mean providing digital public services to companies that have the necessary connectivity and skilled workers, while guaranteeing public trust and thus support for the transactions in a secure environment.

²⁵ Council conclusions May 2013 on the Cloud Communication, highlighting the role of HPC in the EU'.

²⁶ Council conclusions May 2015 on the digital transformation of European industry (8993/15).

²⁷ Conclusions of the Council meeting 23 January 2018 (ECOFIN XX/18).

²⁸ Council conclusions on health in the digital society – making progress in data-driven innovation in the field of health. <http://data.consilium.europa.eu/doc/document/ST-14078-2017-INIT/en/pdf>.

²⁹ Report on the European Cloud Initiative (A8-0183/2017).

³⁰ Parliament resolution on robotics and artificial intelligence. (2015/2103(INL)).

acquire and deploy an integrated world-class high performance computing infrastructure.³² In January 2018, the Commission proposed a Council Regulation to establish the European High Performance Computing Joint Undertaking "EuroHPC".³³

At the second Digital Day on 10 April, 2018, **28 European countries**³⁴ **committed to work together in artificial intelligence** in order to reinforce the EU technology and industrial capacities in this field and to bring its benefits to all citizens and businesses³⁵. European countries also committed to develop together advanced solutions for public services (e.g. through the development of a European blockchain infrastructure for services³⁶), personalised medicine³⁷ and data-driven health and care and common monitoring of the progress of digital investments. All Member States are today engaged in the EU digitisation of industry initiative, with clear commitment to further collaborate in making the best use of digital in businesses.

Stakeholder consultations also show that a set of critical investments are best done at EU level. The areas addressed by the Programme are those where scale is essential to succeed, be it for acquiring the necessary capacities or for their wide use across the EU. Given that knowledge and expertise in advanced digital fields is not available in all regions in Europe, EU-level action, notably through networking digital innovation hubs, can ensure that such expertise is made available in every region.

Given the urgency of the situation and the scale of the investment required, there is a strong case for EU intervention to jointly finance and coordinate actions on a scale capable of meeting the challenges brought by digital transformation. This should ensure that the benefits of new digital technologies are fully shared. Coordinated action can avoid duplication, capitalize on synergies by linking funding with framework conditions, safeguard interoperability, and remove blind spots or a major geographical digital divide.

The call for increased investment now needs to be translated into action in the EU's investment framework. Companies and citizens need a clear message that the EU is investing in their future, that predictability is ensured and support mechanisms are put in place to deal with the complex process of digital transformation. It is Europe's responsibility to act and be visible throughout the process.

As the digital transformation has become an essential factor for growth, social development and transition to a sustainable economy, a critical gap has been exposed in the way the EU and Member States allocate digital funding. The current investment framework has not been designed for EU-wide digital capacity-building and its optimal use. The EU therefore needs a new, integrated and ambitious financing programme to support the deployment and optimal use of the digital capacities that underpin innovation in areas of public interest and business.

- **Choice of the instrument**

The Programme is implemented through a Regulation.

³¹ 29 EU and EEA MSs signed a Letter of Intent to cooperate on testing of automated road transport in cross border sites. Additional reference can be made to the "Council Conclusions on the digitalisation of transport", 5 December 2017.

³² <https://ec.europa.eu/digital-single-market/en/news/eu-ministers-commit-digitising-europe-high-performance-computing-power>. Declaration signed by FR, DE, IT, LU, NL, PT, ES, BE, SL, BU, GR, CR, CY, CZ, CH, PL.

³³ <https://ec.europa.eu/transparency/regdoc/rep/1/2018/EN/COM-2018-8-F1-EN-MAIN-PART-1.PDF>

³⁴ Including Norway, but excluding Croatia at the time of writing..

³⁵ http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=50951

³⁶ Signed by 22 European countries: http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=50954

³⁷ Signed by 13 European countries: http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=50964

3. RESULTS OF RETROSPECTIVE EVALUATIONS, STAKEHOLDER CONSULTATIONS AND IMPACT ASSESSMENTS

- **Retrospective evaluations/fitness checks of existing legislation**

Given that the Digital Europe programme is a new programme, this proposal is not based on a dedicated mid-term evaluation. Instead, lessons learnt draw on evaluations of closely related programmes and initiatives, notably the mid-term evaluation of CEF³⁸ and the Digital Single Market (DSM) mid-term review³⁹.

Of particular importance though is the result from the CEF mid-term evaluation that concluded that the effort devoted in the programme to digital capacities and infrastructures could **only support the very first** steps towards an EU wide digital transformation of areas of public interest⁴⁰. It highlighted that available funding levels under CEF have so far allowed current needs only to be partially addressed, and moreover, that the CEF framework limits the programme's ability to adapt to the latest technological developments and emerging policy priorities (for example cybersecurity-related challenges). The evaluation also showed a **strong willingness from Member States to engage together** in the digital transformation.

- **Stakeholder consultations**

A mix of consultation activities have been run as part of the Impact Assessment work to ensure stakeholder views are systematically accounted for in the process of formulating the post 2020 EU programme for the Digital Europe programme. These consultation activities ranged from stakeholder conferences and events, to expert groups, an on-line consultation, workshops, meetings and seminars and analysis of position papers.

Results of the stakeholder consultations show support for a more efficient, less fragmented approach to maximise the benefits of digital transformation to all European citizens and businesses in the EU. This is particularly pertinent for the key domains of the Digital Europe programme, i.e. high performance computing, cybersecurity and artificial intelligence as well as advanced skills and digital transformation of areas of public interest.

- **Impact assessment**

The impact assessment report was examined by the Regulatory Scrutiny Board on April 25 2018. The Board gave a negative opinion.

Following the Board's negative opinion, the report was thoroughly revised and restructured to better describe how the proposal builds on existing programmes related to Digital. Several examples of similar interventions in third countries or in Member States were given. The details of the delineation with Horizon Europe as agreed with DG RTD were also added. The intervention logic and questions on market failures and upstream investment gap in the various areas were also clarified. More details were also given on delivery modes for each of the proposed actions. New sections explained in more detail what is to be achieved with an increase in funding that cannot be achieved with current intervention mechanisms in the various pillars. Some examples of similar successful policies in the US and in Europe were given. A revised Impact Assessment was resubmitted on 5 May 2018.

³⁸ https://ec.europa.eu/transport/themes/infrastructure/consultations/mid-term-evaluation-connecting-europe-facility-cef_en

³⁹ <https://ec.europa.eu/digital-single-market/en/news/digital-single-market-mid-term-review>

⁴⁰ SWD(2018) 44 final

The positive opinion⁴¹ (with reservations) of the Regulatory Scrutiny Board was received on 8 May 2018 on the understanding that the impact assessment report would be revised to take into account the Board's recommendations. The report has been revised accordingly: the text has been reviewed to clarify what the proposal builds on and what is new and to better explain why the Digital Europe programme is a better channel to support the proposed measures; a new section on Member States engagement has been added to better describe the political endorsement of proposed measures and commitment of Member States; the section related to competition rules and market distortion has been reinforced; a new section has been introduced to provide an example of the envisaged pay per use mechanism.

- **Simplification**

Full coherence with current and future Financial Regulation has been ensured. The exceptions foreseen, are either duly allowed for in related legal texts or precedents exist. Moreover, the following simplification elements have been introduced:

- Flexibility on budget allocations integrated at the level of specific objectives;
- The scope of the intervention is defined at the level of general, specific and operational objectives. Eligibility criteria, funding rates for grants and other elements of the implementation will be provided for in the work programmes. This flexibility is balanced by ensuring Member States' involvement in the implementation of the Programme under the framework of a High Level Expert Group.
- The funding under the Programme can be implemented in accordance with any of the forms laid down in the Financial Regulation;

The Programme will be implemented directly as provided for by the Financial Regulation or indirectly with the appropriate entities or bodies referred to in Article 58(1)(c) [new 61(1)(c)] of the Financial Regulation.

Based on the cost benefit analysis done for executive agencies at the start of Horizon 2020 and the mid-term reviews of CEF and Horizon 2020, the default implementation method for the Programme would be one of direct management. The main advantages of using direct management are that these allow for a strong policy steer as well as fast delivery of EU support.

Indirect management should be used as a complementary method of budget implementation tasks provided for in the Programme basic act. While the Commission remains responsible for the implementation of the budget, entrusting entities with budget implementation tasks pursuant to Article 62 (1) c.) of the Financial Regulation shall ensure full cooperation of the entity concerned in the protection of the Union's financial interests. Entrusting entities with such tasks under indirect management will also need to guarantee a transparent, non-discriminatory, efficient and effective process.

- **Fundamental rights**

The proposed rules of the Digital Europe programme ensure the full respect of the rights and principles set out in the Charter of Fundamental Rights of the European Union and contribute to the implementation of several of those rights. In particular, the objectives of this programme are to ensure the freedom of expression and information, the prohibition of

⁴¹ <http://ec.europa.eu/transparency/regdoc/?fuseaction=ia&year=2017&serviceId=&s=Chercher>

discrimination, the right to effective remedy and fair trial and as prescribed by Articles 11, 21 and 47 of the Charter. The programme aims also to reinforce the freedom to conduct a business in accordance with European Union law and national laws and practices (Article 16). The protection of personal data shall also be ensured in line with Article 8 of the Charter as well as healthcare in accordance with Article 35 of the Charter and consumer protection in accordance with Article 38 of the Charter.

4. BUDGETARY IMPLICATIONS

In line with the Commission proposal for the Multiannual Financial Framework 2021-2027⁴² (COM(2018)XXX), the financial envelope for the programme is set at EUR 9 194 000 000 in current prices and its indicative distribution shall be as follows (see article 4 of the proposal).

Further details are provided in the Legislative Financial Statement annexed to this proposal.

5. OTHER ELEMENTS

• Implementation plans and monitoring, evaluation and reporting arrangements

Without prejudice to the possibility to provide funding in any of the forms laid down in the Financial Regulation the intention is to implement the programme as described below. As stated previously, attention will be paid to preserving competition within the internal market:

1. For **high performance computing**, the continuation of the EuroHPC joint undertaking which is currently under discussion with the Council is deemed to be the most effective and efficient instrument to implement the objectives of the EuroHPC initiative, in particular to coordinate national and European Union strategies and investments in high performance computing infrastructure and R&D, pooling resources from public and private funds, and safeguarding the economic and strategic interests of the Union⁴³. The Joint Undertaking is expected to draw budget from both Digital Europe and Horizon Europe.
2. Joint procurement or grants relating to **artificial intelligence** activities would be awarded through direct management.
3. **Cybersecurity** related activities would be implemented through direct or indirect management.
4. Funding relating to the development of **advanced digital skills** would be implemented primarily through the Digital Innovation Hubs, as defined in Article [16] and explained below, and the relevant competence centres. The work programme will be drafted by the Commission in collaboration with the above-mentioned relevant competence centres, which would be able in this way to provide the inputs needed to ensure consistency of interventions in the field of advanced digital skills with the latest technological developments. The aim is thus to provide a swift response to the fast-changing needs of the labour market.

⁴² COM/2018/321 final: Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions “A Modern Budget for a Union that Protects, Empowers and Defends The Multiannual Financial Framework for 2021-2027” 2 May 2018

⁴³ 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>)

5. Funding relating to **the digital transformation of areas of public interest**, could continue to be directly managed . European Commission management will continue to be used for development of solutions to ensure common design and architectural interoperability.

Notwithstanding the above, the management of specific sectorial core service platforms could be transferred to the operational management of already existing agencies, if this possibility is already provided for in their remit.

6. The **digitisation of industry** will be implemented through the Digital Innovation Hubs. Digital Innovation Hubs will diffuse digital capacities notably high performance computing, artificial intelligence, cybersecurity, digital skills across the economy enabling the digital transformation of the industry and public sector organisations. Digital Innovation Hubs are providing access to technological expertise and experimentation facilities, enabling organisations to better assess the business case of digital transformation projects. Testing and experimentation services provided by Digital Innovation Hubs may involve other enabling technologies necessary to the deployment of complete digital transformation solutions. A network of Digital Innovation Hubs shall be established, ensuring the widest geographical coverage across Europe. Grants related to Digital Innovation Hubs will be awarded directly by the Commission.

The implementation modes will seek to develop strong synergies between the various components of the Programme. These are further described in annex 4 of the impact assessment as concerns high performance computing, artificial intelligence and cybersecurity. Where appropriate, implementation may also leverage other core digital technologies that are reaching market maturity and subject of previous EU level investments such as 5G, IoT, and cloud based services.

The Digital Economy and Society Index (DESI) is established as a reference instrument to measure the progress of digital transformation in the EU. The DESI instrument is based on a number of indicators which are derived from rigorous statistical analysis. Data will also be collected from other sources, including special surveys.

Output and impact indicators are defined relating to the main areas of the programme (high performance computing, artificial intelligence, cybersecurity, advanced digital skills, deployment, best use of digital capacity and interoperability).

The feedback from yearly monitoring will allow to adapt the programme management and structure depending on the results obtained. Existing indicators can be used from official EU statistics provided by the annual ICT surveys, and from the labour force survey. Special surveys may be carried out. Data collection from DESI will be complemented by information generated by the programme itself.

In line with paragraphs 22 and 23 of the Interinstitutional Agreement of 13 April 2016⁴⁴, where the three institutions confirmed that evaluations of existing legislation and policy should provide the basis for impact assessments of options for further action, the Commission will carry-out an interim and a final evaluation at pillar and at programme level. The evaluations will assess the Programme's effects on the ground based on the Programme

⁴⁴ 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.

indicators and targets and a detailed analysis of the degree to which the Programme can be deemed relevant, effective, efficient, provides enough EU added value and is coherent with other EU policies. The evaluations will include lessons learnt to identify any problems or any potential to further improve the actions or their results and to help maximise their exploitation/impact. The conclusions of the evaluations accompanied by observations will be communicated to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Court of Auditors.

Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

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,

Having regard to the opinion of the European Economic and Social Committee⁴⁵,

Having regard to the opinion of the Committee of the Regions⁴⁶,

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 management⁴⁷], for the European Parliament and the Council during the annual budgetary procedure.
- (2) Regulation (EU, Euratom) 2018/... of the European Parliament and of the Council [the new FR] (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 Council⁴⁸, Council Regulation (Euratom, EC) No 2988/95⁴⁹, Council Regulation (Euratom, EC) No 2185/96⁵⁰ and Regulation (EU) 2017/1939⁵¹, the financial interests of the Union are to be protected through

⁴⁵ OJ C , , p. . tbc

⁴⁶ OJ C , , p. . tbc

⁴⁷ *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

⁴⁸ 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>

⁴⁹ 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>

⁵⁰ 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>

⁵¹ 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>

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 Council⁵². 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 / /EU⁵³], 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.
- (5) Pursuant to paragraph 22 and 23 of the Inter-institutional agreement for Better Law-Making of 13 April 2016⁵⁴, there is a need to evaluate this Programme on the basis of information collected through specific monitoring requirements, while avoiding overregulation and administrative burdens, in particular on Member States. These requirements, where appropriate, can include measurable indicators, as a basis for evaluating the effects of the Programme on the ground.
- (6) The Tallinn Digital Summit⁵⁵ of September 2017 and the Conclusions of the European Council⁵⁶ of 19 October 2017 indicated the need for Europe to invest in digitising our economies and addressing the skills gap to maintain and enhance European competitiveness, 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 some of the challenges posed by the digital transformation and reviewing policies affected by the digital transformation.
- (7) The European Council concluded in particular that the Union should urgently address emerging trends: this includes issues such as artificial intelligence and distributed ledgers technologies (e.g. blockchain), while at the same time ensuring a high level of

⁵² 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).

⁵³ Council Decision / /EU.

⁵⁴ 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.

⁵⁵ <https://www.eu2017.eu/news/insights/conclusions-after-tallinn-digital-summit>

⁵⁶ <https://www.consilium.europa.eu/media/21620/19-euco-final-conclusions-en.pdf>

data protection, digital 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.

- (8) The Commission's Communication on 'A new, modern Multiannual Financial Framework for a European Union that delivers efficiently on its priorities post-2020'⁵⁷ 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 filling the skills gap across the Union.
- (9) The Communication "Towards a common European data space"⁵⁸, 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 of new products and services based on data.
- (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. The programme should be structured into five Specific Objectives reflecting key policy areas, namely: high-performance computing, cybersecurity, artificial intelligence, 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.

A central role in the implementation of the Programme should be attributed to Digital Innovation Hubs, which should stimulate the broad adoption of advanced digital technologies by industry, by public organisations and academia. A network of Digital Innovation Hubs should ensure the widest geographical coverage across Europe⁵⁹. A first set of Digital Innovation Hubs will be selected based on Member States' proposals and then the network will be enlarged through an open and competitive process. The Digital Innovation Hubs will serve as access points to latest digital capacities including high performance computing (HPC), artificial intelligence, cybersecurity, as well as other existing innovative technologies such as Key Enabling Technologies, available also in fablabs or citylabs. 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. The network of Digital Innovation Hubs should also contribute to the participation of the outermost regions in the Digital Single Market.

⁵⁷ COM(2018) 98 final

⁵⁸ COM (2018) 125 final

⁵⁹ As indicated in the Communication on Digitising European Industry (COM(2016) 180 final)

- (12) The Programme should be implemented through projects reinforcing essential digital capacities and their wide use. This should involve co-investments with Member States and, when needed, the private sector. 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 policy window(s) [...] of the InvestEU Fund.
- (14) The Programme's actions should be used 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.
- (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.
- (17) The support to the Union's intervention in this area was expressed by the Council⁶⁰ and, by the European Parliament⁶¹. Moreover, in 2017 nine Member States signed the EuroHPC Declaration⁶², 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 Union⁶³. Moreover, high performance computing competence centres in Member States will provide high performance computing services to industry, academia and public administrations.
- (19) Developing capacity related to **artificial intelligence** is a crucial driver for the digital transformation of industry 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

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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>)

machine learning techniques are at the heart of all main web platforms and big data applications.

- (20) The availability of large-scale data sets and testing and experimentation facilities are of major importance for the development of artificial intelligence.
- (21) In its resolution of 1 June 2017 on digitising European industry⁶⁴ 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.
- (22) Cybersecurity is a challenge for the whole Union that cannot continue to be addressed only with fragmented national initiatives. Europe's cybersecurity capacity should be reinforced to endow Europe with the necessary capacities to protect its citizens 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 initiatives⁶⁵ 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.
- (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 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,

⁶⁴ Document ref. A8-0183/2017, available at:

<http://www.europarl.europa.eu/sides/getDoc.do?type=TA&language=EN&reference=P8-TA-2017-0240>

⁶⁵ <https://ec.europa.eu/digital-single-market/en/policies/cybersecurity>

addressing key competences, digital skills⁶⁶ 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.

- (27) In its resolution of 1 June 2017 on digitising European industry⁶⁷ the European Parliament stated that education, training and lifelong learning are the cornerstone of social cohesion in a digital society.
- (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 response so does the skills dimension. Training opportunities in advanced digital skills 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 and Horizon Europe programmes.
- (29) **Modernising public administrations and services through digital means** is crucial to reducing administrative burden on industry and on citizens in general by making their interactions with public authorities faster, more convenient and less costly, as well as by increasing the efficiency and the quality of the services provided to citizens and businesses. 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 will benefit from the access to high quality digital services across Europe.
- (30) The digital transformation of the areas of public interest such as healthcare⁶⁸, mobility, justice, earth/environmental monitoring, education 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 coordination under this Regulation best achieves the potential for exploiting synergies.
- (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.

⁶⁶ 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.

⁶⁷ Document ref. A8-0183/2017, available at:
<http://www.europarl.europa.eu/sides/getDoc.do?type=TA&language=EN&reference=P8-TA-2017-0240>

⁶⁸ http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=51628

- (33) The Annual Growth Survey published by the Commission in 2017⁶⁹ 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, growth and employment. 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.
- (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 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.
- (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.

European Parliament resolution of 1 June 2017 on **digitising European industry**⁷⁰ 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".⁷¹
- (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".⁷²

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"⁷³ that recognises "availability of world class networking and cloud infrastructure" as an essential ingredient of industry digitisation.

- (40) The General Data Protection Regulation (GDPR), applicable from May 2018 onwards, by providing for a single set of rules directly applicable in the Member States legal orders, will guarantee the free flow of personal data between EU Member States and

⁶⁹ COM(2016) 725 final

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

reinforce trust and security of the individuals, two indispensable elements for a real Digital Single Market. The actions undertaken under this Programme, when they involve the processing of personal data, should therefore support the application of the GDPR, for instance in the field of artificial intelligence and blockchain technology.

- (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.
- (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 objectives⁷⁴. Relevant actions will be identified during the Programme's preparation and implementation, and reassessed in the context of the relevant evaluations and review processes.
- (44) In order to ensure uniform conditions for the implementation of this Regulation, implementing powers should be conferred on the Commission for the adoption of the work programmes 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. Those powers should be exercised in accordance with the advisory procedure referred to in Article 4 of Regulation (EU) 182/2011⁷⁵ laying down the rules and general principles concerning mechanisms for control by the Member States of the Commission's exercise of implementing powers.
- (45) The work programmes should be adopted in principle as multi-annual work programmes, typically every two years, or, if justified by the needs related to the implementation of the programme, annual work programmes. 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 Annex 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

⁷⁴ COM(2018) 321 final, page 1

⁷⁵ Regulation (EU) No 182/2011 of the European Parliament and of the Council of 16 February 2011 laying down the rules and general principles concerning mechanisms for control by Member States of the Commission's exercise of implementing powers (OJ L 55, 28.2.2011, p. 13).

Agreement on Better Law-Making of 13 April 2016. In particular, 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 principles⁷.
- (48) Third countries which are members of the European Economic Area (EEA) may participate in Union programmes in the framework of the cooperation established under the EEA agreement, which provides for the implementation of the programmes by a decision under that agreement. A specific provision should be introduced in this Regulation to grant the necessary rights for and access to the authorizing officer responsible, the European Anti-Fraud Office (OLAF) as well as the European Court of Auditors to comprehensively exert their respective competences.
- (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.

HAVE ADOPTED THIS REGULATION:

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]; "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) 'Digital Innovation Hub' means legal entity designated or selected in an open and competitive procedure in order to fulfil the tasks under the Programme, in particular providing access to technological expertise and experimentation facilities, such as equipment and software tools to enable the digital transformation of the industry.
- (f) 'Advanced digital skills' are those skills and competences necessary to design, develop, manage, deploy and maintain the technologies supported by this Regulation.

Article 3

Programme objectives

1. The Programme has the following general objective: to support the digital transformation of the European economy and society and bring its benefits to European citizens and businesses. The Programme will:
 - (a) reinforce Europe's capacities in key digital technology areas through large-scale deployment,
 - (b) widen their diffusion and uptake in areas of public interest and the private sector.
2. The Programme will have five 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

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 world-class exascale⁷⁶ supercomputing and data infrastructure in the Union that shall be accessible on a non-commercial basis to public and private users and for publicly funded research purposes;
- (b) deploy ready to use/operational technology resulting from research and innovation to build an integrated Union high performance computing ecosystem, covering all scientific and industrial value chain segments, including hardware, software, applications, services, interconnections and digital skills;
- (c) deploy and operate a post-exascale⁷⁷ infrastructure, including the integration with quantum computing technologies and develop new research infrastructures for computing science.

⁷⁶ Billions of billions of floating operations per second

⁷⁷ A thousand times faster than exascale

Article 5

Artificial Intelligence

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 in the Union, including data resources and libraries of algorithms in compliance with data protection legislation;
- (b) make those capacities accessible to all businesses and public administrations;
- (c) reinforce and network existing artificial intelligence testing and experimentation facilities in Member States;

Article 6

Cybersecurity and Trust

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 procurement of advanced cybersecurity equipment, tools and data infrastructures in full compliance with data protection legislation;
- (b) support the best use of European knowledge, capacity and skills related to cybersecurity;
- (c) ensure a wide deployment of the latest cybersecurity solutions across the economy;
- (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 Union⁷⁸.

Article 7

Advanced Digital Skills

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, fostering greater professionalism, especially with regard to high performance computing, big data analytics, cybersecurity, distributed ledger technologies, robotics and artificial intelligence. The financial intervention shall pursue the following operational objectives:

- (a) support the design and delivery of long-term trainings and courses for students, IT professionals and the workforce;
- (b) support the design and delivery of short-term trainings and courses for entrepreneurs, small business leaders and the workforce;

⁷⁸ OJ L 194, 19.7.2016, p. 1–30

- (c) support on-the-job trainings and traineeships for students, young entrepreneurs and graduates.

Article 8

Deployment, best use of digital capacities and Interoperability

The financial intervention by the Union under Specific Objective 5. Deployment, best use of digital capacities and Interoperability shall achieve the following operational objectives:

- (a) ensure that the public sector and areas of public interests, such as health and care, education, judiciary, transport, energy, environment, cultural and creative sectors, can deploy and access state-of-the-art digital technologies, in particular high performance computing, artificial intelligence and cybersecurity;
- (b) deploy, operate and maintain trans-European interoperable Digital Service Infrastructures (including related services) in complementarity with national and regional actions;
- (c) facilitate the development, update and use of solutions and frameworks by European public administrations, businesses and citizens, including the re-use of interoperability solutions and frameworks;
- (d) offer to public administrations access to testing and piloting of digital technologies, including their cross-border use;
- (e) support the uptake of advanced digital and related technologies, including in particular high performance computing, artificial intelligence, cybersecurity and future emerging technologies by the Union industry, notably SMEs;
- (f) support the design, testing, implementation and deployment of interoperable digital 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 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 infrastructures using distributed ledger services and applications, including support for interoperability and standardisation and fostering the deployment of EU cross-border applications;
- (i) build up and strengthen the network of Digital Innovation Hubs.

Article 9

Budget

1. The financial envelope for the implementation of the Programme for the period 2021–2027 shall be EUR 9 194 000 000 in current prices.
2. The indicative distribution of the referred amount shall be:
 - (a) up to EUR 2 698 240 000 for Specific Objective 1, High Performance Computing

- (b) up to EUR 2 498 369 000 for Specific Objective 2, Artificial Intelligence
 - (c) up to EUR 1 998 696 000 for Specific Objective 3, Cybersecurity and Trust
 - (d) up to EUR 699 543 000 for Specific Objective 4, Advanced Digital skills
 - (e) up to EUR 1 299 152 000 for Specific Objective 5, Deployment, best use of digital capacities and Interoperability
3. The amount referred to in paragraph 1 may 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. 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. Where possible those resources shall be used for the benefit of the Member State concerned.
 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

The programme shall be open to:

1. 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. Acceding countries, candidate countries and potential candidates , in accordance with the general principles and general terms and conditions for their participation in Union programmes established in the respective framework agreements and Association Council Decisions, or similar agreements, and in accordance with the specific conditions laid down in agreements between the Union and them;
3. Countries covered by the European Neighbourhood Policy, in accordance with the general principles and general terms and conditions for the participation of those countries in Union programmes established in the respective framework agreements and Association Council Decisions, or similar agreements, and in accordance with the specific conditions laid down in agreements between the Union and those countries;
4. Third countries in accordance with the conditions laid down in a specific agreement covering the participation of the third country to any Union programme, provided that the agreement
 - ensures a fair balance as regards the contributions and benefits of the third country participating in the Union programmes;

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

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 [19], related costs shall not be covered by the programme.
2. The cooperation with third countries and organisations mentioned in paragraph 1 under Specific Objective 3. Cybersecurity and Trust shall be subject to Article [12].

Article 12

Security

3. 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, 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.
4. 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.
5. Where appropriate, the Commission or funding body shall carry out a security scrutiny for proposals raising security issues .
6. Where appropriate, the actions shall comply with Commission Decision (EU, Euratom) 2015/444/EC⁷⁹, and its implementing rules.
7. 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 security reasons. In such cases calls for proposals and calls for tenders shall be

⁷⁹ 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).

restricted to entities established or deemed to be established in Member States and controlled by Member States and/or nationals of Member States.

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.
2. Appropriate mechanisms of coordination between relevant authorities and appropriate monitoring tools shall be established 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) and 58(1)(c) of the Financial Regulation notably for Specific Objectives 1 and 3. 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. It 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.

Article 15

European Partnerships

The Programme may be implemented through European Partnerships. 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 Digital Innovation Hubs shall be established.
2. For the purpose of the establishment of the network mentioned in paragraph 1, each Member State shall designate candidate entities through an open and competitive process, on the basis of the following criteria:
 - (a) appropriate competences related to the functions of the Digital Innovation Hubs;
 - (b) appropriate management capacity, staff and infrastructure;
 - (c) operational and legal means to apply the administrative, contractual and financial management rules laid down at Union level;
 - (d) appropriate financial guarantees, issued preferably by a public authority, corresponding to the level of Union funds it will be called upon to manage.
3. The Commission shall adopt a decision on the selection of entities forming the initial network. 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.
4. Additional Digital Innovation Hubs shall be selected on the basis of an open and competitive process, in such a way to ensure the widest geographical coverage across Europe. The number of entities of the network shall be proportional to the population of a given Member States and there shall be at least one Digital Innovation Hub per Member State. To address the specific constraints faced by the EU outermost regions, specific entities may be nominated to cover their needs.
5. The Digital Innovation Hubs may receive funding in the form of grants.
6. The Digital Innovation Hubs which receive funding shall be involved in the implementation of the Programme to:
 - (a) provide digital transformation services - including testing and experimentation facilities - targeted towards SMEs and midcaps, also in sectors that are slow in the uptake of digital and related technologies;
 - (b) transfer expertise and know-how between regions, in particular by networking SMEs and midcaps established in one region with Digital Innovation Hubs established in other regions which are best suited to provide relevant services;
 - (c) provide thematic services, including services related to artificial intelligence, high performance computing and cybersecurity and trust to the administrations, public sector organisations, SMEs and midcaps. Individual Digital Innovation Hubs may specialise in specific thematic services and do not need to provide all thematic services mentioned in this paragraph;

- (d) provide financial support to third parties, under the specific objective 4, Advanced Digital Skills.

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. In addition to the criteria set out in Article 197 of the Financial Regulation, the eligibility criteria set out in paragraphs 2 to 4 shall apply:
2. The following entities shall be eligible:
 - (a) legal entities established in:
 - (i) a Member State or an overseas country or territory linked to it
 - (ii) a third countries associated with the Programme;
 - (b) any legal entity created under Union law or any international organisation.
3. 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.
4. Natural persons shall not be eligible, except for grants awarded under Specific Objective 4. Advanced digital skills.
5. The work programme 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.
6. Legal entities established in a third country which is not associated to the programme should in principle bear the cost of their participation.

CHAPTER III

GRANTS

Article 19

Grants

Grants under the Programme shall be awarded and managed in accordance with Title VIII of the Financial Regulation.

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 the minimum the following elements:
 - (a) the maturity of the action in the project development;
 - (b) the soundness of the implementation plan proposed;
 - (c) the stimulating effect of Union support on public and private investment, when applicable;
 - (d) the need to overcome financial obstacles such as the lack of market finance;
 - (e) where applicable, the economic, social, climate and environmental impact, and accessibility;
 - (f) where applicable, a trans-European dimension;
 - (g) where applicable, a balanced geographical distribution across the Union, including the outermost regions;
 - (h) where applicable, the presence of a long-term sustainability plan.

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 may also receive a contribution from 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.

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 first multiannual work programme shall focus on the activities set out in the Annex and ensure that the actions thereby supported do not crowd out private financing. Subsequent work programmes may include activities not set out in the Annex provided that they are 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. 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.
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 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 and results are collected efficiently, effectively, and in a timely manner. 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. 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

Evaluation

1. Evaluations shall be carried out in a timely manner to feed into the decision-making process.
2. The interim evaluation of the Programme 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.
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 [1], a final evaluation of the Programme shall be carried out by the Commission.
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;
5. The Commission shall communicate the conclusions of the evaluations accompanied by its observations, 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 Article 24 shall be conferred on the Commission until 31 December 2028.
3. The delegation of power referred to in Article 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 article 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 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. 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

1. 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 Council⁸⁰ and under Decision (EU) 2015/2240⁸¹, 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) 2015/2240⁸².
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

4. 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,

For the European Parliament
The President

For the Council
The President

⁸⁰ 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).

⁸¹ 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.

⁸² 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.

Legislative financial statement

1. FRAMEWORK OF THE PROPOSAL/INITIATIVE

- 1.1. Title of the proposal/initiative
- 1.2. Policy area(s) concerned (*programme cluster*)
- 1.3. Nature of the proposal/initiative
- 1.4. Grounds for the proposal/initiative
- 1.5. Duration and financial impact
- 1.6. Management mode(s) planned

2. MANAGEMENT MEASURES

- 2.1. Monitoring and reporting rules
- 2.2. Management and control system
- 2.3. Measures to prevent fraud and irregularities

3. ESTIMATED FINANCIAL IMPACT OF THE PROPOSAL/INITIATIVE

- 3.1. Heading(s) of the multiannual financial framework and expenditure budget line(s) affected
- 3.2. Estimated impact on expenditure
 - 3.2.1. *Summary of estimated impact on expenditure*
 - 3.2.2. *Estimated impact on appropriations of an administrative nature*
 - 3.2.3. *Third-party contributions*
- 3.3. Estimated impact on revenue

LEGISLATIVE FINANCIAL STATEMENT

1. FRAMEWORK OF THE PROPOSAL/INITIATIVE

1.1. Title of the proposal/initiative

Regulation establishing the Digital Europe programme

1.2. Policy area(s) concerned (*Programme cluster*)

European Strategic Investments

1.3. The proposal/initiative relates to:

a new action

a new action following a pilot project/preparatory action⁸³

the extension of an existing action

a merger or redirection of one or more actions towards another/a new action

1.4. Grounds for the proposal/initiative

1.4.1. Requirement(s) to be met in the short or long term including a detailed timeline for roll-out of the implementation of the initiative

The target is that the programme becomes operational right from its start in 2021.

Regarding the delivery modes for the implementation of the programme, it is proposed to use both direct and indirect management.

As far as direct management is concerned, it is envisaged to launch the first calls at the end of 2020. The possible delegation to an Executive Agency will be subject to the outcome of the cost-benefit analysis and related decisions to be taken.

1.4.2. Added value of Union involvement (it may result from different factors, e.g. coordination gains, legal certainty, greater effectiveness or complementarities). For the purposes of this point 'added value of Union involvement' is the value resulting from Union intervention which is additional to the value that would have been otherwise created by Member States alone.

The proposed Digital Europe programme addresses the areas where EU investment has clear added value based on three criteria:

- areas where necessary funding is so significant that no Member State can do it, in a timely way, alone

- areas where there is a need to aggregate resources (computing power, data expertise) that are scattered throughout Europe, and

- areas where interoperability is important

A guiding principle of the proposal is the added value of EU-level action. There is a clear political will today to cooperatively address what were previously domestic concerns. The EU is therefore in a unique position to plan, jointly finance, and

⁸³

As referred to in Article 58(2)(a) or (b) of the Financial Regulation.

coordinate actions on a scale capable of meeting these challenges, and ensure that the benefits of new digital technologies are fully reaped by citizens businesses in all Member States. Multi-lateral coordinated action can also avoid duplication, capitalise on synergies by linking funding with framework conditions, safeguard interoperability, and avoid blind spots or a major geographical digital divide. Given the urgency of the situation and the scale of the investment required, there is thus a very strong case for EU intervention.

1.4.3. *Lessons learned from similar experiences in the past*

Existing programmes cover important aspects related to digital transformation of the economy and society: (i) support for research and innovation in next generation technologies and applications, (ii) support for digital infrastructure projects under CEF – where experience in current MFF showed that the programme was best suited for physical connectivity, (iii) support for Media under the Creative Europe Programme, and (iv) support for digital in EU regions through ESIF. All these are important investments and need to be continued in the next MFF. They are not sufficient though. There is no current programme that enable the EU as a whole to act as first mover in acquiring common digital capacities in essential areas that underpin growth, jobs and sustainability of high quality public services i.e. advanced computing and data, cybersecurity and artificial intelligence.

1.4.4. *Compatibility and possible synergy with other appropriate instruments*

The Digital Europe programme has complementarities and synergies with a number of other proposed instruments in the post-2020 MFF, notably: Horizon Europe, Connecting Europe Facility (CEF2), EU Values Fund, Creative Europe (including the Media programme), InvestEU Fund, COSME, ERDF, European Social Fund + (including Youth Employment Initiative and basic digital skills), Erasmus +, European Globalisation Adjustment Fund (basic and advanced digital skills), Internal Border Management Fund, Environment and Climate Action (including Energy Efficiency) and European Agricultural Fund for Rural Development.

Synergies between the programmes will make investments more effective and provide better value for citizens. They will amplify the impact of EU-level digital investments on the ground, while national and regional digital investment will be able to better complement the EU programme.

By increasing the impact and efficiency of public funds through practical linkages between the different programmes, the EU will tackle digital challenges in a more targeted and streamlined way; creating more jobs, increasing growth and boosting competitiveness. In the implementation of the Programme, attention will be paid to preserving competition within the internal market.

1.5. Duration and financial impact

limited duration

- in effect from 2021 to 2027
- Financial impact from 2021 to 2027 for commitment appropriations and from 2021 to 2031 for payment appropriations.

unlimited duration

- Implementation with a start-up period from YYYY to YYYY,
- followed by full-scale operation.

1.6. Management mode(s) planned⁸⁴

Direct management by the Commission

- by its departments, including by its staff in the Union delegations;
- by the executive agencies

Shared management with the Member States

Indirect management by entrusting budget implementation tasks to:

- third countries or the bodies they have designated;
 - international organisations and their agencies (to be specified);
 - the EIB and the European Investment Fund;
 - bodies referred to in Articles 70 and 71 of the Financial Regulation;
 - public law bodies;
 - bodies governed by private law with a public service mission to the extent that they provide adequate financial guarantees;
 - bodies governed by the private law of a Member State that are entrusted with the implementation of a public-private partnership and that provide adequate financial guarantees;
 - persons entrusted with the implementation of specific actions in the CFSP pursuant to Title V of the TEU, and identified in the relevant basic act.
- *If more than one management mode is indicated, please provide details in the 'Comments' section.*

Comments

The Programme will be implemented directly by the Commission and/or by an existing executive agency depending on the outcome of a future cost-benefit analysis or indirectly with the appropriate entities or bodies referred to in Art 70 and 71 of the Financial Regulation.

For the purposes of the present Legislative Financial Statement, direct management is assumed in view of making the most prudent projections.

⁸⁴ Details of management modes and references to the Financial Regulation may be found on the BudgWeb site:
<https://myintracomm.ec.europa.eu/budgweb/EN/man/budgmanag/Pages/budgmanag.aspx>

2. MANAGEMENT MEASURES

2.1. Monitoring and reporting rules

Specify frequency and conditions.

The Digital Economy and Society Index (DESI) is established as a reference instrument to measure the progress of digitisation in the EU. The DESI instrument is based on a number of indicators which are derived from rigorous statistical analysis. Data will also be collected from other sources, including special surveys.

Output and impact indicators are defined relating to the main areas of the programme (high performance computing, artificial intelligence, cybersecurity, advanced digital skills, deployment, best use of digital capacity and interoperability).

The feedback from yearly monitoring will allow adapting the programme management and structure depending on the results obtained. Existing indicators can be used from annual ICT surveys, and from the labour force survey. Special surveys may be carried out. Data collection from DESI will be complemented by information generated by the programme itself.

Ex-post evaluation arrangements will draw, to the extent possible, on counterfactual impact evaluation techniques. A mid-term and final evaluation are planned, to be carried out at pillar and at programme level.

2.2. Management and control system(s)

2.2.1. *Justification of the management mode(s), the funding implementation mechanism(s), the payment modalities and the control strategy proposed*

Management modes

The Programme will be implemented directly as provided for the Financial Regulation or indirectly with the appropriate entities or bodies referred to in Article 58(1)(c) [new 62(1)(c)] of the Financial Regulation. The modes of implementation will need to ensure that co-investment with MSs is achieved in the most flexible way.

Funding Instruments

The Programme will be implemented through a toolkit of available instruments offered by the Financial Regulation, taking into consideration the actual policy needs, the need for maximum flexibility throughout the entire programme and the control cost effectiveness while ensuring the achievement of the objectives and to avoid market distortion:

Procurement instruments - unlike in other countries in the world - have not been used extensively so far by the EU Member States in areas such as HPC or cybersecurity. More joint procurement by Member States could allow Europe to take advantage of efficiency gains and counterbalance the lack of coordination in the systems of procurement. The Programme will induce a critical mass for procurement, obtaining better value for money in acquisitions. It will also ensure a tighter link to the technology supply guaranteeing that national suppliers remain at the forefront of technology advancement.

The Programme will make use of grants in accordance with the provisions in the Financial Regulation.

The use of financial instruments is envisaged in particular as regards achieving the objectives relating to private sector digitisation/Artificial Intelligence (AI). Financial instruments for AI would be delivered making use of the budgetary guarantee to be proposed in the framework of InvestEU.

The Programme will provide for blending of funds to allow inter alia the provision of grants in combination with financial instruments.

Control Strategies

The control strategies will take into account the risk of the respective implementation mechanism and funding tools.

In particular, the envisaged innovation procurement contracts, which will concern particularly high amounts, will require a dedicated control strategy.

For grants the control strategy will be set up accordingly and will focus on three key stages of grant implementation, in accordance with the Financial Regulation

- The organisation of calls and the selection of proposals that fit the policy objectives of the programme,
- Operational, monitoring and ex-ante controls that cover project implementation, public procurement, pre-financing, interim and final payments, management of guarantees,
- Ex-post controls of projects and payments.

This control strategy is expected to deliver performance results in line with the metrics observed for the first iteration of the programme

- ~100 % of execution of commitment and payment appropriation;
- ~100% of beneficiaries informed on time; more than 95% of the grants signed on time;
- ~100% of payments made on time;
- residual error rate (RER) closely under the 2% materiality threshold.

2.2.2. *Information concerning the risks identified and the internal control system(s) set up to mitigate them*

The following risks were identified:

- Delays in the setting-up of the dedicated implementation structures,
- Delays in the implementation of the projects,
- Possible errors or mismanagement/ misuse of EU funds,

Programme implementation will favour, wherever possible, less error prone grant implementation tools, including e.g. lump- sums.

The key control functions foreseen for the programme include focussing on the policy objectives while taking into account the internal control objectives (L&R, control efficiency and cost effectiveness). They will aim to ensure the involvement of all actors, appropriate budgetary flexibility and consistent ex-ante and ex-post controls and may be risk-differentiated.

The controls will be supported by a yearly bottom up risk assessment, by a systematic assessment of the control framework, by an appropriate reporting of deviations (exception and non-compliance register) and by corrective actions undertaken with regard to recommendations issued by the Internal Audit Service, by the European Court of Auditors, or by the Discharge Authority.

2.2.3. *Estimation and justification of the cost-effectiveness of the controls (ratio of "control costs ÷ value of the related funds managed"), and assessment of the expected levels of risk of error (at payment & at closure)*

Cost and benefits of controls

The total cost of the controls, including the cost at the level of the Commission, executive agency and implementing bodies, is estimated to be around 3,55% of the operational payment appropriations at programme level.

Under the assumption that the Programme would be entirely managed by the Commission without the support of an executive agency or implementing body, the cost of control would be substantially higher and could be around 7,7% of the payment appropriations at programme level.

The controls foreseen aim at ensuring a smooth and effective oversight of the implementing entities by the Commission and at ensuring the necessary degree of assurance at Commission level.

The benefits of the controls are the following:

- Avoiding the selection of weaker or inadequate proposals.
- Optimising the planning, and the use of EU funds, so as to preserve EU added value.
- Ensuring the quality of the grant agreements, avoiding errors in the identification of legal entities, ensuring the correct calculation of the EU Contributions and taking the necessary guarantees for a correct operation of the grants.
- Detection of ineligible costs at payment stage.
- Detection of errors affecting the legality and regularity of operations at audit stage.

Furthermore, ex-ante risk assessments will be performed and lower risk mechanisms like lump sums, standardised costs and/or standard project templates will be used.

Estimated level of error

The aim is to maintain the residual error rate under to the threshold of 2% for the whole Programme, while limiting the control burden for beneficiaries to achieve the right balance between the legality and regularity objective with other objectives such as the attractiveness of the Programme in particular for SMEs and the cost of controls.

2.3. Measures to prevent fraud and irregularities

Specify existing or envisaged prevention and protection measures, e.g. from the Anti-Fraud Strategy.

DG CONNECT being in the lead for the implementation of the Digital Europe programme and its budget is determined to fight against fraud at all stages of the management process. The DG has developed and implements a comprehensive anti-fraud strategy covering all major business activities and fraud risks identified. This includes an enhanced use of intelligence using advanced IT tools (notably in grant management) and continuous training and information for staff.

The current DG Anti-Fraud Strategy, covering grant management, contract management/ procurement and indirect management/ supervision of third parties (agencies, joint undertakings) and certain elements on ethics and conduct, will be updated after the revision of the Commission's Anti-Fraud Strategy in 2018. This will also cover any specific risks for the Digital Europe programme that need to be taken into account.

Overall the entire set of control measures proposed also aims for a positive impact on the fight against fraud. Furthermore, it should be underlined that detected fraud in the implementation of comparable programmes in the Commission has been very low in proportion to total expenditure; nevertheless DG CONNECT being charged with the implementation of the budget of the DEP remains committed to combat it.

The legislation will ensure that key controls such as audits and/or on-the-spot checks can be carried out by the Commission services, including OLAF, using the standard provisions recommended by OLAF.

3. ESTIMATED FINANCIAL IMPACT OF THE PROPOSAL/INITIATIVE

3.1. Heading of the multiannual financial framework and new expenditure budget line(s) proposed

Heading of multiannual financial framework	Budget line	Type of expenditure	Contribution			
	Number Heading...I Single Market Innovation & Digital	Diff./Non-diff. ⁸⁵	from EFTA countries ⁸⁶	from candidate countries ⁸⁷	from third countries	within the meaning of Article [21(2)(b)] of the Financial Regulation
	02.06 – Digital Europe programme					
	02.01.04 Administrative expenditure	N Diff				
	02.06.01 Cybersecurity	Diff		YES (if specified in the annual work programme)	YES, limited to some part of the Programme	
	02.06.02 HPC	Diff	YES			NO
	02.06.03 Artificial intelligence	Diff				
	02.06.04 Skills	Diff				
	02.06.05 Deployment	Diff				
	02.06.05.01 Interoperability	Diff				

⁸⁵ Diff. = Differentiated appropriations / Non-diff. = Non-differentiated appropriations.

⁸⁶ EFTA: European Free Trade Association.

⁸⁷ Candidate countries and, where applicable, potential candidates from the Western Balkans

3.2. Estimated impact on expenditure

3.2.1. Summary of estimated impact on expenditure⁸⁸

EUR million (to three decimal places)

Heading of multiannual financial framework	1	Single Market Innovation & Digital
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			2021	2022	2023	2024	2025	2026	2027	Post 2027	TOTAL
02.06.01 Cybersecurity ⁸⁹	Commitments	(1)	284,892	322,244	327,578	248,382	253,295	258,214	263,316		1.957,922
	Payments	(2)	21,221	102,765	150,212	167,336	156,475	150,124	148,074	1.061,715	1.957,922
02.06.02 HPC	Commitments	(1)	384,604	435,030	442,232	335,314	341,950	348,589	355,477		2.643,196
	Payments	(2)	28,648	138,733	202,786	225,903	211,241	202,668	199,899	1.433,316	2.643,196
02.06.03 Artificial intelligence	Commitments	(1)	356,115	402,805	409,474	310,476	316,619	322,768	329,146		2.447,402
	Payments	(2)	26,526	128,457	187,765	209,170	195,594	187,656	185,092	1.327,144	2.447,402
02.06.04 Skills	Commitments	(1)	99,712	112,786	114,652	86,933	88,653	90,375	92,161		685,272
	Payments	(2)	7,428	35,968	52,574	58,567	54,766	52,544	51,826	371,597	685,272
02.06.05 Deployment	Commitments	(1)	161,219	184,025	186,511	134,149	136,361	138,576	141,303		1.082,144
	Payments	(2)	5,545	41,855	72,106	82,157	74,704	69,103	66,789	669,886	1.082,144
02.06.05.01 Interoperability ⁹⁰	Commitments	(1)	23,960	25,433	26,415	27,299	28,281	29,263	29,852		190,505

⁸⁸ Totals may not tally due to rounding.

⁸⁹ The distribution of the operational budget between the 5 specific objectives is indicative. It will be revised taking into consideration the development of technologies, the market and the implementation of the programme.

	Payments	(2)	8,249	24,942	25,532	26,612	27,005	28,477	29,459	20,229	190,505
Operational appropriations (split according to the budget lines listed under 3.1)	Commitments	(1)	1.310,502	1.482,323	1.506,862	1.142,553	1.165,160	1.187,785	1.211,256		9.006,441
	Payments	(2)	97,617	472,721	690,975	769,744	719,785	690,573	681,139	4.883,886	9.006,441
Appropriations of an administrative nature financed from the envelope of the programme ⁹¹	Commitments = Payments	(3)	27,038	30,234	30,744	24,165	24,642	25,120	25,618		187,559
TOTAL appropriations for the envelope of the programme	Commitments	=1+3	1.337,540	1.512,557	1.537,606	1.166,718	1.189,802	1.212,905	1.236,874		9.194,000
	Payments	=2+3	124,655	502,955	721,719	793,909	744,427	715,693	706,757	4.883,886	9.194,000

⁹⁰ Management by DG DIGIT or part of Articles 8 (b) and (c) for facilitating the development, update and use of solutions and frameworks by European public administrations, businesses and citizens, including the re-use of interoperability solutions and frameworks

⁹¹ Technical and/or administrative assistance and expenditure in support of the implementation of EU programmes and/or actions (former 'BA' lines), indirect research, direct research.

Heading of multiannual financial framework	7	‘Administrative expenditure’
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EUR million (to three decimal places)

		2021	2022	2023	2024	2025	2026	2027	<i>Post 2027</i>	TOTAL
Human resources		45,888	51,890	52,748	40,024	40,812	41,601	42,424		315,388
Other administrative expenditure		1,490	1,519	1,549	1,580	1,613	1,644	1,679		11,078
TOTAL appropriations under HEADING 7 of the multiannual financial framework	(Total commitments = Total payments)	47,378	53,410	54,298	41,605	42,426	43,246	44,103		326,466

EUR million (to three decimal places)

		2021	2022	2023	2024	2025	2026	2027	<i>Post 2027</i>	TOTAL
TOTAL appropriations across HEADINGS of the multiannual financial framework	Commitments	1.384,918	1.565,967	1.591,904	1.208,323	1.232,228	1.256,151	1.280,977		9.520,466
	Payments	172,033	556,365	776,017	835,514	786,853	758,939	750,860	4.883,886	9.520,466

3.2.2. *Summary of estimated impact on appropriations of an administrative nature*

- The proposal/initiative does not require the use of appropriations of an administrative nature
- The proposal/initiative requires the use of appropriations of an administrative nature, as explained below:

EUR million (to three decimal places)

Years	2021	2022	2023	2024	2025	2026	2027	TOTAL
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HEADING 7 of the multiannual financial framework								
Human resources	45,888	51,890	52,748	40,024	40,812	41,601	42,424	315,388
Other administrative expenditure	1,490	1,519	1,549	1,580	1,613	1,644	1,679	11,078
Subtotal HEADING 7 of the multiannual financial framework	47,378	53,410	54,298	41,605	42,426	43,246	44,103	326,466

Outside HEADING 7⁹² of the multiannual financial framework								
Human resources								

⁹² Technical and/or administrative assistance and expenditure in support of the implementation of EU programmes and/or actions (former ‘BA’ lines), indirect research, direct research.

Other expenditure of an administrative nature	27,038	30,234	30,744	24,165	24,642	25,120	25,618	187,559
Subtotal outside HEADING 7 of the multiannual financial framework	27,038	30,234	30,744	24,165	24,642	25,120	25,618	187,559

TOTAL	74,416	83,644	85,042	65,77	67,068	68,366	69,721	514,025
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The appropriations required for human resources and other expenditure of an administrative nature will be met by appropriations from the DG that are already assigned to management of the action and/or have been redeployed within the DG, together if necessary with any additional allocation which may be granted to the managing DG under the annual allocation procedure and in the light of budgetary constraints.

[

3.2.2.1. Estimated requirements of human resources

- The proposal/initiative does not require the use of human resources.
- The proposal/initiative requires the use of human resources, as explained below:

Estimate to be expressed in full time equivalent units

Years	2021	2022	2023	2024	2025	2026	2027	
• Establishment plan posts (officials and temporary staff)								
Headquarters and Commission's Representation Offices	231	261	266	201	205	209	214	
Delegations								
Research								
• External staff (in Full Time Equivalent unit: FTE) - AC, AL, END, INT and JED ⁹³								
Heading 7								
Financed from HEADING 7 of the multiannual financial framework	- at Headquarters	173	196	199	151	154	157	160
	- in Delegations							
Financed from the envelope of the programme ⁹⁴	- at Headquarters							
	- in Delegations							
Research								
Other (specify)								
TOTAL	404	457	464	352	359	366	373	

The human resources required will be met by staff from the DG who are already assigned to management of the action and/or have been redeployed within the DG, together if necessary with any additional allocation which may be granted to the managing DG under the annual allocation procedure and in the light of budgetary constraints.

⁹³ AC= Contract Staff; AL = Local Staff; END = Seconded National Expert; INT = agency staff; JPD= Junior Professionals in Delegations.

⁹⁴ Sub-ceiling for external staff covered by operational appropriations (former 'BA' lines).

Description of tasks to be carried out:

Officials and temporary staff	Operational implementation of Digital Europe programme, including support and coordination costs.
External staff	Operational implementation of Digital Europe programme, including support and coordination costs.

3.2.3. Third-party contributions

The proposal/initiative:

- does not provide for co-financing by third parties
- provides for the co-financing by third parties estimated below:

Appropriations in EUR million (to three decimal places)

Years	2021	2022	2023	2024	2025	2026	2027	TOTAL
Specify the co-financing body								
TOTAL appropriations co-financed	p.m							

3.3. Estimated impact on revenue

- The proposal/initiative has no financial impact on revenue.
- The proposal/initiative has the following financial impact:
 - on own resources
 - on other revenue

please indicate, if the revenue is assigned to expenditure lines

EUR million (to three decimal places)

Budget revenue line:	Impact of the proposal/initiative ⁹⁵						
	2021	2022	2023	2024	2025	2026	2027
Article							

For assigned revenue, specify the budget expenditure line(s) affected.

[...]

Other remarks (e.g. method/formula used for calculating the impact on revenue or any other information).

[...]

⁹⁵ As regards traditional own resources (customs duties, sugar levies), the amounts indicated must be net amounts, i.e. gross amounts after deduction of 20 % for collection costs.