Thursday 24 June 2021

P9_TA(2021)0310

European High Performance Computing Joint Undertaking *

European Parliament legislative resolution of 24 June 2021 on the proposal for a Council regulation on establishing the European High Performance Computing Joint Undertaking (COM(2020)0569 — C9-0335/2020 — 2020/0260(NLE))

(Consultation)

(2022/C 81/18)

The European Parliament,

— having regard to the Commission proposal to the Council (COM(2020)0569),

— having regard to Article 187 and the first paragraph of Article 188 of the Treaty on the Functioning of the European Union, pursuant to which the Council consulted Parliament (C9-0335/2020),

— having regard to Rule 82 of its Rules of Procedure,

— having regard to the report of the Committee on Industry, Research and Energy (A9-0177/2021),

1. Approves the Commission proposal as amended;

2. Calls on the Commission to alter its proposal accordingly, in accordance with Article 293(2) of the Treaty on the Functioning of the European Union;

3. Calls on the Council to notify Parliament if it intends to depart from the text approved by Parliament;

4. Asks the Council to consult Parliament again if it intends to substantially amend the Commission proposal;

5. Instructs its President to forward its position to the Council and the Commission.

Amendment 1

Proposal for a regulation

Recital 5

Text proposed by the Commission	*Amendment*
(5) The Communication from the Commission of 19 February 2020 entitled 'A European Strategy for Data' outlines Europe's strategy for policy measures and investments to enable the data economy for the coming five years. It emphasises the creation of European public common data spaces that will boost growth and create value. Support to the creation of such common European data spaces and federated, secure cloud infrastructures would ensure that more data becomes available for use in the economy and society, while keeping companies and individuals who generate the data in control. High Performance Computing and quantum computing are essential components of the seamless provision of computing resources with different performance characteristics required to ***maximize*** the growth and exploitation of European public common data spaces and federated, secure cloud infrastructures for public, industrial and scientific applications.	(5) The Communication from the Commission of 19 February 2020 entitled 'A European Strategy for Data' outlines Europe's strategy for policy measures and investments to enable the data economy for the coming five years. It emphasises the creation of European public common data spaces that will boost growth and create value. Support to the creation of such common European data spaces and federated, secure cloud infrastructures would ensure that more data becomes available for use in the economy and society, while keeping companies and individuals who generate the data in control. ***In order to ensure that users' data is ported effectively, cloud infrastructures in the Union should be based on the principles of trust, openness, security, interoperability and portability.*** High Performance Computing and quantum computing are essential components of the seamless provision of computing resources with different performance characteristics required to ***maximise*** the growth and exploitation of European public common data spaces and federated, secure cloud infrastructures for public, industrial and scientific applications.

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Amendment 2

Proposal for a regulation

Recital 6

Text proposed by the Commission	*Amendment*
(6) The Communication from the Commission of 19 February 2020 entitled 'Shaping Europe's digital future' presents Europe's digital strategy and focuses on few key objectives to ensure that digital solutions help Europe to pursue its own way towards a digital transformation that works for the benefit of people. Among the key actions it proposes is to invest in building and deploying cutting-edge joint digital capacities, including in supercomputing and quantum technologies, and to expand Europe's supercomputing capacity to develop innovative solutions ***for*** medicine, transport and ***the*** environment.	(6) The Communication from the Commission of 19 February 2020 entitled 'Shaping Europe's digital future' presents Europe's digital strategy and focuses on few key objectives to ensure that digital solutions help Europe to pursue its own way towards a ***human-centric*** digital transformation that works for the benefit of people ***and contributes to the European Green Deal***. Among the key actions it proposes is to invest in building and deploying cutting-edge joint digital capacities, including in supercomputing and quantum technologies, and to expand Europe's supercomputing capacity to develop innovative solutions ***across all economic sectors, such as industry, manufacturing, cybersecurity, health and*** medicine, transport and ***sustainable mobility,*** environment***, energy and climate change***.

Amendment 3

Proposal for a regulation

Recital 7

Text proposed by the Commission	*Amendment*
(7) The Communication from the Commission of 10 March 2020 entitled 'A new Industrial Strategy for Europe' is reflecting an ambitious industrial strategy for Europe to lead the twin transitions towards climate neutrality and digital leadership. The Communication stresses the support, among others, to the development of key enabling technologies that are strategically important for Europe's industrial future, including High Performance Computing and quantum technologies.	(7) The Communication from the Commission of 10 March 2020 entitled 'A new Industrial Strategy for Europe' is reflecting an ambitious industrial strategy for Europe to lead the twin transitions towards climate neutrality and digital leadership. The Communication stresses the support, among others, to the development of key enabling technologies that are strategically important for Europe's industrial future, including High Performance Computing and quantum technologies. ***The development of a world-class High Performance Computing infrastructure and ecosystem represents a strategic resource for the future and resilience of the Union's industry and SMEs, while at the same time combating regional disparities, creating new jobs and encouraging global competition which could benefit the achievement of a vibrant data economy and help fight climate change.***

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Amendment 4

Proposal for a regulation

Recital 9

Text proposed by the Commission	*Amendment*
(9) Europe's leading role in the data economy, its scientific excellence, and its industrial strength increasingly depend on its ability to develop key High Performance Computing technologies, as well as to provide access to world-class supercomputing and data infrastructures, and to maintain its present leadership in High Performance Computing applications. High Performance Computing is a mainstream technology for the digital transformation of the European economy***, enabling*** many traditional industrial sectors to innovate with higher value products and services. In combination with other advanced digital technologies such as Artificial Intelligence, big data and cloud technologies, High Performance Computing is paving the way towards innovative societal and industrial applications in critical areas for Europe such as personalised medicine, weather forecast and climate change, smart and green development and transport, new materials ***for*** clean energy, drug design and virtual testing, sustainable agriculture, or engineering and manufacturing.	(9) Europe's leading role in the data economy, its scientific excellence, and its industrial strength increasingly depend on its ability to develop key High Performance Computing technologies, as well as to provide access to world-class supercomputing and data infrastructures, and to maintain its present leadership in High Performance Computing applications. High Performance Computing is a mainstream technology for the digital transformation of the European economy ***and it has the potential to enable*** many traditional industrial sectors to innovate with higher value products and services. In combination with other advanced digital technologies such as Artificial Intelligence, big data and cloud technologies, ***when deployed and used in a human centric and ethical way*** High Performance Computing is paving the way towards innovative societal and industrial applications in critical areas for Europe such as personalised medicine, weather forecast and climate change, smart and green development and transport, new materials ***research for sustainable*** clean energy ***technologies***, drug design and virtual testing, sustainable agriculture, or engineering and manufacturing.

Amendment 5

Proposal for a regulation

Recital 10

Text proposed by the Commission	*Amendment*
(10) High Performance Computing is a strategic resource for policy-making, powering applications that provide the means to understand and design efficient solutions to address many complex global challenges and for crisis management. High Performance Computing contributes to key policies such as the European Green Deal with models and tools for transforming the increasing number of complex environmental challenges into opportunities for social innovation and economic growth. An example is the Destination Earth initiative announced in the Communications from the Commission of 11 December 2019 on 'The European Green Deal', and of 19 February 2020 on 'A European strategy for data' and on 'Shaping Europe's digital future'.	(10) High Performance Computing is a strategic resource for policy-making, powering applications that provide the means to understand and design efficient solutions to address many complex global challenges and for crisis management. High Performance Computing contributes to key policies such as the European Green Deal with models and tools for transforming the increasing number of complex environmental challenges into opportunities for social innovation and ***sustainable*** economic growth. An example is the Destination Earth initiative announced in the Communications from the Commission of 11 December 2019 on 'The European Green Deal', and of 19 February 2020 on 'A European strategy for data' and on 'Shaping Europe's digital future'. ***High performance computing is a strategic asset to safeguard the innovation capacity and the strategic autonomy of the Union and foster economic growth.***

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Amendment 6

Proposal for a regulation

Recital 11

Text proposed by the Commission	*Amendment*
(11) Global events such as the COVID-19 pandemic have shown the importance of investing in High Performance Computing and health-related modelling platforms and tools, as they are playing a key role in the fight against the pandemic, often in combination with other digital technologies such as big data and artificial intelligence. High Performance Computing is being used to accelerate the identification and production of treatments, to predict the virus' spread, to help plan the distribution of medical supplies and resources, and to simulate post-epidemic exit measures in order to evaluate different scenarios. High Performance Computing modelling platforms and tools are critical tools for the current and future pandemics, and they will play ***a key*** role in health ***and personalised medicine***.	(11) Global events such as the COVID-19 pandemic have shown the importance of investing in High Performance Computing and health-related modelling platforms and tools, as they are playing a key role in the fight against the pandemic, often in combination with other digital technologies such as big data and artificial intelligence ***and computer modelling and simulation***. High Performance Computing is being used to accelerate the identification ***of critical components for the pharmaceutical sector*** and production of treatments, to predict the virus' spread, to help plan the distribution of medical supplies and resources, and to simulate post-epidemic exit measures in order to evaluate different scenarios. High Performance Computing modelling platforms and tools are critical tools for the current and future pandemics, and they will play ***an important*** role in health ***sector as they enable the testing of the safety, efficacy and performance of new preventive strategies, optimisation of automated diagnosis modelling, medicines and medical devices. It is also important to ensure the interoperability of High Performance Computing, artificial intelligence (including machine and deep learning), big data, high performance data analytics and cloud, as major economic sectors relying on High Performance Computing include manufacturing, health and pharmaceuticals.***

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Amendment 7

Proposal for a regulation

Recital 14

Text proposed by the Commission	*Amendment*
(14) In order to equip the Union with the computing performance needed to maintain its research and industrial capacities at a leading edge, the Member States investment in High Performance Computing and quantum computing should be coordinated and the industrial and market take-up of High Performance Computing and quantum computing technologies be reinforced both in the public and private sectors. The Union should increase its effectiveness in turning the technology developments into demand-oriented and application-driven European High Performance Computing and quantum computing systems of the highest quality, establishing an effective link between technology supply, co-design with users, and a joint procurement of world-class systems, and creating a world-class ecosystem in High Performance Computing and quantum computing technologies and applications. At the same time, the Union should provide an opportunity for its supply industry to leverage on such investments, leading to their uptake in large-scale and emerging application fields ***such as personalised medicine, climate change, connected and automated driving or other lead markets*** that are underpinned by artificial intelligence, blockchain technologies, edge computing or more broadly by the digitalisation of the European industry.	(14) In order to equip the Union with the computing performance needed to maintain its research and industrial capacities at a leading edge, the Member States investment in High Performance Computing and quantum computing should be coordinated and the industrial and market take-up of High Performance Computing and quantum computing technologies be reinforced both in the public and private sectors. The Union should increase its effectiveness in turning the technology developments into demand-oriented and application-driven European High Performance Computing and quantum computing systems of the highest quality ***and widely spread and accessible across Europe***, establishing an effective link between technology supply, co-design with users, and a joint procurement of ***secure*** world-class systems, and creating a world-class ecosystem in High Performance Computing and quantum computing technologies and applications ***for the benefit of all Member States and regions***. At the same time, the Union should provide an opportunity for its supply industry to leverage on such investments, leading to their uptake in large-scale and emerging application fields that are underpinned by artificial intelligence***, computer modelling and simulation***, blockchain technologies, edge computing or more broadly by the digitalisation of the European industry.

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Amendment 8

Proposal for a regulation

Recital 14 a (new)

Text proposed by the Commission	*Amendment*
	(14a) In order to design, refresh and implement a new range of low-power and highly energy-efficient European world-class and innovative supercomputing ecosystems, technologies and hardware systems, a vast amount of research and innovation activities and resources is needed. In synergy with other European partnerships and initiatives, the Joint Undertaking is well placed to establish strategic roadmaps and research and investment plans to help bolster European electronics and embedded systems value chain, with a view to expanding the European industrial presence, addressing key technological, security and societal challenges and establishing advanced European hardware design capabilities and production facilities.

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Amendment 9

Proposal for a regulation

Recital 15

Text proposed by the Commission	*Amendment*
(15) In order for the Union and its Member States to reach technological autonomy in key digital technologies such as High Performance Computing and quantum computing, they should invest in next generation low-power supercomputing technologies, innovative software and advanced supercomputing systems for exascale and post-exascale computing and quantum computing, and for innovative supercomputing and data applications ***for medicine, the environment, manufacturing and engineering***. This should allow the European supply industry to thrive in a wide range of key technology and application areas that reach beyond High Performance Computing and quantum computing and, in the long run, feed broader ICT markets with such technologies. It would also support the High Performance Computing and quantum computing science and user industry to undergo a digital transformation and boost its innovation potential.	(15) In order for the Union and its Member States to reach ***a strategic*** technological autonomy***, while preserving an open economy,*** in key digital technologies such as High Performance Computing and quantum computing they should invest in next generation low-power ***and energy and resource efficient*** supercomputing technologies, innovative software and advanced supercomputing systems for exascale and post-exascale computing and quantum computing, ***including technologies for privacy-preserving computation,*** and for innovative supercomputing and data applications***. High Performance Computing and data management should be actively supported in all fields of research, including social sciences and humanities. Investments are needed to develop relevant competencies***. This should allow the European supply industry to thrive in a wide range of key technology and application areas that reach beyond High Performance Computing and quantum computing and, in the long run, feed broader ICT markets with such technologies. It would also support the High Performance Computing and quantum computing science and user industry to undergo a digital transformation and boost its innovation potential.

Amendment 10

Proposal for a regulation

Recital 15 a (new)

Text proposed by the Commission	*Amendment*
	(15a) In order to establish a robust quantum computing ecosystem within the Union it is necessary to invest in developing hardware-aware algorithms for neural networks, standardisation for encoding input-output data and to facilitate access to end-users enabled by cloud services.

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Amendment 11

Proposal for a regulation

Recital 16

Text proposed by the Commission	*Amendment*
(16) Pursuing a common strategic EU vision in High Performance Computing and quantum computing ***is*** essential for realising the Union's and its Member States' ambition to ensure a leading role and strategic autonomy in the digital economy. The objective would be to establish in Europe a world leading hyper-connected, federated and secure High Performance Computing and quantum computing service and data infrastructure ecosystem, and be in a position to produce innovative and competitive High Performance Computing and quantum computing systems based on a supply chain ***that will ensure*** components, technologies and knowledge limiting the risk of disruptions.	(16) Pursuing a common strategic EU vision in High Performance Computing and quantum computing***, ensuring the transition from simulation-centric High Performance Computing and integrating High Performance Computing in a full continuum of IT infrastructure, including other ecosystems such as big data, AI and the Internet of Things are*** essential for realising the Union's and its Member States' ambition to ensure a leading role and strategic autonomy in the digital ***transition, while preserving an open*** economy. The objective would be to establish in Europe a world leading hyper-connected, federated and secure High Performance Computing and quantum computing service and data infrastructure ecosystem, and be in a position to produce innovative and competitive High Performance Computing and quantum computing systems based on a ***resilient and responsible*** supply chain ***ensuring the availability of*** components, technologies and knowledge limiting the risk of disruptions ***while protecting the people and the environment***.

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Amendment 12

Proposal for a regulation

Recital 17

Text proposed by the Commission	*Amendment*
(17) A Joint Undertaking represents the best instrument capable to implement the strategic EU vision in High Performance Computing and quantum computing, ensuring that the Union enjoys world-class supercomputing, quantum computing and data capabilities according to its economic potential, matching the needs of European users, and with the required strategic autonomy in critical High Performance Computing and quantum computing technologies. The Joint Undertaking is ***the best instrument to overcome*** the present limitations, as described in the Staff Working Document accompanying this Regulation, while offering ***the highest*** economic, societal, and environmental impact and best safeguarding the Union's interests in High Performance Computing and quantum computing. It can pool resources from the Union, the Member States and countries associated to Horizon Europe and the Digital Europe Programme or the Connecting Europe Facility and the private sector. It can implement a procurement framework and operate world-class High Performance Computing and quantum computing systems. It can launch research and innovation programmes for developing European technologies and their subsequent integration in world-class supercomputing systems.	(17) A Joint Undertaking represents the best ***available*** instrument capable to implement the strategic EU vision in High Performance Computing and quantum computing, ensuring that the Union enjoys world-class supercomputing, quantum computing and data capabilities according to its economic potential, matching the needs of European users, and with the required strategic autonomy***, while preserving an open economy,*** in critical High Performance Computing and quantum computing technologies. The Joint Undertaking is ***one of the instruments that contribute to overcoming*** the present limitations, as described in the Staff Working Document accompanying this Regulation, while offering ***a high*** economic, societal, and environmental impact and best safeguarding the Union's interests in High Performance Computing and quantum computing ***when properly funded, developed and implemented***. It can pool resources from the Union, the Member States and countries associated to Horizon Europe and the Digital Europe Programme or the Connecting Europe Facility and the private sector. It can implement a procurement framework and operate world-class High Performance Computing and quantum computing systems. It can launch research and innovation programmes for developing European technologies and their subsequent integration in world-class supercomputing systems.

Amendment 13

Proposal for a regulation

Recital 18

Text proposed by the Commission	*Amendment*
(18) The EuroHPC Joint Undertaking is part of the Institutionalised Partnerships portfolio under Horizon Europe which should strive to strengthen EU scientific capacities to deal with emerging threats and future challenges in a reinforced European Research Area; secure sustainability-driven EU value chains and EU strategic autonomy in key technologies and industries; and enhance the uptake of innovative solutions addressing climate, environmental, health and other global societal challenges in line with Union strategic priorities, including to reach climate neutrality in the Union in 2050.	(18) The EuroHPC Joint Undertaking is part of the Institutionalised Partnerships portfolio under Horizon Europe which should strive to strengthen EU scientific capacities to deal with emerging threats and future challenges in a reinforced European Research Area; secure ***environmental targets and*** sustainability-driven EU value chains and EU strategic autonomy in key technologies and industries; and enhance the uptake of innovative solutions addressing climate, environmental, health and other global societal challenges in line with Union strategic priorities, including to reach climate neutrality in the Union in 2050 ***at the latest***.

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Amendment 14

Proposal for a regulation

Recital 19

Text proposed by the Commission	*Amendment*
(19) The Joint Undertaking should be set up and start operating at the latest by ***early*** 2021 until 31 December 2033 to equip the Union with a world-class federated, secure and hyper-connected supercomputing infrastructure, and to develop the necessary technologies, applications and skills for reaching exascale capabilities around 2022-2024, and post exascale around 2025 — 2027, while promoting a world-class European High Performance Computing and quantum computing innovation ecosystem.	(19) The Joint Undertaking should be set up and start operating at the latest by 2021 until 31 December 2033 to equip the Union with a world-class federated, secure and hyper-connected supercomputing infrastructure, and to develop the necessary technologies, applications and skills for reaching exascale capabilities around 2022-2024, and post exascale around 2025-2027, while promoting a world-class European High Performance Computing and quantum computing innovation ecosystem.

Amendment 15

Proposal for a regulation

Recital 20

Text proposed by the Commission	*Amendment*
(20) The public-private partnership in the form of the Joint Undertaking should combine the financial and technical means that are essential to master the complexity of the ever escalating pace of innovation in this area. Therefore, the members of the Joint Undertaking should be the Union, Member States and countries associated to Horizon Europe, the Digital Europe Programme or the Connecting Europe Facility agreeing on a joint European initiative in High Performance Computing and quantum computing; and associations representing their constituent entities and other organisations with an explicit and active ***engagement*** to produce research and innovation results, to develop and deploy high performance computing or quantum computing capabilities, or contributing to address the skills gap and keep the know-how in the field of High Performance Computing and quantum computing in Europe. The Joint Undertaking should be open to new members.	(20) The public-private partnership in the form of the Joint Undertaking should combine the financial and technical means that are essential to master the complexity of the ever escalating pace of innovation in this area ***while ensuring that the functioning of the Joint Undertaking remains simple and flexible***. Therefore, the members of the Joint Undertaking should be the Union, Member States and countries associated to Horizon Europe, the Digital Europe Programme or the Connecting Europe Facility agreeing on a joint European initiative in High Performance Computing and quantum computing; and associations representing their constituent entities and other organisations with an explicit and active ***commitment*** to produce research and innovation results, to develop and deploy high performance computing or quantum computing capabilities, or contributing to address the skills gap and keep the know-how in the field of High Performance Computing and quantum computing in Europe. The Joint Undertaking should be open to new members. ***The design and development of new teaching and training schemes are key since the technologies and software in the fields of High Performance Computing and quantum computing are undergoing continuous change. The Joint Undertaking should provide a favourable framework for supporting Participating States. In order to maximise the impact of indirect actions, the specificities of the Joint Undertaking, with its tripartite model, should be taken into consideration with regard to the management of financial contributions from Participating States.***

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Amendment 16

Proposal for a regulation

Recital 25

Text proposed by the Commission	*Amendment*
(25) The Joint Undertaking should address clearly defined topics that would enable academia and European industries at large to design, develop and use the most innovative technologies in High Performance Computing and quantum computing, and to establish an integrated and federated, secure networked infrastructure across the Union with world-class High Performance Computing and quantum computing capability, high-speed connectivity and leading-edge applications and data and software services for its scientists and for other lead users from industry, including SMEs and the public sector. The Joint Undertaking should ***aim at*** the development and use of top class technologies and infrastructures, ***addressing*** the demanding requirements of European scientific, industrial and public sector users.	(25) The Joint Undertaking should address clearly defined topics that would enable academia and European industries at large to design, develop and use the most innovative technologies in High Performance Computing and quantum computing, and to establish an integrated and federated, secure networked infrastructure across the Union with world-class High Performance Computing and quantum computing capability, high-speed connectivity and leading-edge applications and data and software services for its scientists and for other lead users from industry, including SMEs***, start-ups, innovative businesses*** and the public sector. The Joint Undertaking should ***be able to work in an agile, simple and flexible manner, in order to ensure that*** the development and use of top class technologies and infrastructures, ***address*** the demanding requirements of European scientific, industrial and public sector users. ***The Joint Undertaking should significantly reduce access barriers, such as the cost of service fees, heavy administrative burdens and a lack of awareness, for SMEs and start-ups in the phase of research and development (R&D), in order to have a more open-access and distributed service. The Joint Undertaking should have in place a set of clear and simple rules, in accordance with Union legislation, in particular for intellectual property, liability or in-kind contributions to additional activities, in order to enhance attractiveness for all stakeholders and in particular for industry and SMEs.***

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Amendment 17

Proposal for a regulation

Recital 25 a (new)

Text proposed by the Commission	*Amendment*
	(25a) The Joint Undertaking should be organised around seven pillars, of which one is administrative and six are technical. The infrastructure pillar, part of the federation of supercomputing services pillar and the widening usage and skills pillar should be funded by the Digital Europe Programme. The remaining activities of the federation of supercomputing services pillar, including the interconnection with the Union's common European data spaces and secure cloud infrastructures, should be funded by Connecting Europe Facility. The technology, the application and the international cooperation pillars should be funded by the Horizon Europe Framework Programme.

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Amendment 18

Proposal for a regulation

Recital 26

Text proposed by the Commission	*Amendment*
(26) The Joint Undertaking should contribute to reducing the specific skills gap across the Union ***by engaging in awareness raising*** measures ***and*** assisting in the building of new knowledge and human capital.	(26) ***Considering that a lack of skills is the primary obstacle to accessing research and innovation infrastructure and investing more in research and innovation and digitalisation, and to accessing High Performance Computing and quantum computing technologies,*** the Joint Undertaking should ***actively*** contribute to reducing the specific skills gap across the Union ***through upskilling and reskilling, and to adopting*** measures ***to increase the gender balance and address the gender dimension, while also attracting and retaining the best talents. It should do so by*** assisting in the building of new knowledge and human capital***, by engaging in awareness raising campaigns and by promoting educational and dissemination activities, with the involvement of academic, scientific and knowledge networks, social and economic partners, media, industry and SMEs organisations and other players, while preventing all kinds of biases, especially gender and racial biases from being introduced in the algorithms, products or conclusions resulting from its work. This should all be part of a coordinated effort on outreach to inform potential users on the possibilities that High Performance Computing and quantum computing can offer. There is also a need to build competencies in procurements made in the framework of this Regulation.***

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Amendment 19

Proposal for a regulation

Recital 26 a (new)

Text proposed by the Commission	*Amendment*
	(26a) Considering that a lack of skills and experience is an obstacle to accessing High Performance Computing and quantum computing technologies, the Joint Undertaking should encourage the development of specific university degrees and educational programmes for quantum computing, given the increasing need for experts in that field, and in order to avoid creating a 'quantum bottleneck'. In that regard, the Joint Undertaking can contribute to raising the skills and experience level across the Union among students, academics and experts (ensuring gender balance) in the relevant domains, upgrading competencies combining software and industry expertise with understanding of frontier research in science and innovation, paying special attention to the gender perspective and adopting measures to promote gender balance in that field, while ensuring the widest geographical coverage in the Union.

Amendment 20

Proposal for a regulation

Recital 27

Text proposed by the Commission	*Amendment*
(27) In line with the external policy objectives and international commitments of the Union, the Joint Undertaking should facilitate cooperation between the Union and international actors by defining a cooperation strategy, including identifying and promoting areas for cooperation in R&D and skills development and implementing actions where there is a mutual benefit, as well as ensuring an access policy of respective High Performance Computing and quantum computing capabilities and applications ***mainly*** based on reciprocity.	(27) In line with the external policy objectives and international commitments of the Union, the Joint Undertaking should facilitate cooperation between the Union and international actors by defining a cooperation strategy, including identifying and promoting areas for cooperation in R&D and skills development and implementing actions where there is a mutual benefit, as well as ensuring an access policy of respective High Performance Computing and quantum computing capabilities and applications based on reciprocity.

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Amendment 21

Proposal for a regulation

Recital 28

Text proposed by the Commission	*Amendment*
(28) The Joint Undertaking should aim at promoting the exploitation of any resulting High Performance Computing technologies in the EU. It should also aim at safeguarding the investments in the supercomputers it acquires. In doing so, it should take appropriate measures to ensure the security of the supply chain of acquired technologies that should cover the whole lifetime of these supercomputers.	(28) ***The Joint Undertaking should cooperate with the 'Partnership for Advanced Computing in Europe' (PRACE), the GÉANT network, as well as with other European and national supercomputing and data infrastructures.*** The Joint Undertaking should aim at promoting the exploitation of any resulting High Performance Computing technologies in the EU. It should also aim at safeguarding the investments in the supercomputers it acquires. In doing so, it should take appropriate measures to ensure the security of the supply chain of acquired technologies that should cover the whole lifetime of these supercomputers.

Amendment 22

Proposal for a regulation

Recital 30

Text proposed by the Commission	*Amendment*
(30) In order to achieve its objectives to design, develop and use the most innovative technologies in High Performance Computing and quantum computing, the Joint Undertaking should provide financial support in particular in the form of grants and procurement following open and competitive calls for proposals and calls for tenders based on annual work programmes. Such financial support should be targeted in particular at proven market failures that prevent the development of the programme concerned, should not crowd-out private investments and should have an incentive effect in that it changes the behaviour of the recipient.	(30) In order to achieve its objectives to design, develop and use the most innovative technologies in High Performance Computing and quantum computing, the Joint Undertaking should provide financial support in particular in the form of grants and procurement following open***, fair, transparent*** and competitive calls for proposals and calls for tenders based on annual work programmes. Such financial support should be targeted in particular at proven market failures that prevent the development of the programme concerned, should not crowd-out private investments and should have an incentive effect in that it changes the behaviour of the recipient.

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Amendment 23

Proposal for a regulation

Recital 31

Text proposed by the Commission	*Amendment*
(31) In order to achieve its objectives to increase the innovation potential of industry, and in particular of SMEs, to contribute to reducing the specific skills gap, to support the increase of knowledge and human capital and to upraise High Performance Computing and quantum computing capabilities, the Joint Undertaking should support the creation, and in particular the networking and coordination of national High Performance Computing competence centres across the Union. These competence centres should provide High Performance Computing and quantum computing services to industry, academia and public administrations on their demand. They should primarily promote and enable access to the High Performance Computing innovation ecosystem, facilitate access to the supercomputers and quantum computers, address the significant shortages in skilled technical experts by undertaking awareness raising, training and outreach activities, and embark on networking activities with stakeholders and other competence centres to foster wider innovations, for example by exchanging and promoting best practice use cases or application experiences, by sharing their training facilities and experiences, by facilitating the co-development and exchange of parallel codes, or by supporting the sharing of innovative applications and tools for public and private users, in particular SMEs.	(31) In order to achieve its objectives to increase the innovation potential of industry, and in particular of SMEs, ***start-ups and innovative businesses*** to contribute to reducing the specific skills gap, to support the increase of knowledge and human capital and to upraise High Performance Computing and quantum computing capabilities, the Joint Undertaking should support the creation, and in particular the networking and coordination of national High Performance Computing competence centres across the Union. These competence centres should provide High Performance Computing and quantum computing services to industry, academia and public administrations on their demand ***and provide a possibility for individuals and non-governmental organisations (NGOs) to use the computing powers for socially and environmentally beneficial goals***. They should primarily promote and enable access to the High Performance Computing innovation ecosystem, facilitate access to the supercomputers and quantum computers, address the significant shortages in skilled technical experts by undertaking awareness raising, training and outreach activities, and embark on networking activities with stakeholders and other competence centres to foster wider innovations, for example by exchanging and promoting best practice use cases or application experiences, by sharing their training facilities and experiences, by facilitating the co-development and exchange of parallel codes, or by supporting the sharing of innovative applications and tools for public and private users, in particular SMEs***, start-ups and innovative businesses. In order to avoid duplication, synergies and coordination should be ensured with other similar structures, such as the Digital Innovation Hubs.***

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Amendment 24

Proposal for a regulation

Recital 33

Text proposed by the Commission	*Amendment*
(33) The Joint Undertaking should hyper-connect all the supercomputers and data infrastructures it will own or co-own with state-of-the-art networking technologies, making them widely accessible across the Union, and should interconnect and federate its supercomputing and quantum computing data infrastructure, as well as national, regional and other computing infrastructures with a common platform. The Joint Undertaking should also ensure the interconnection of the federated, secure supercomputing, and quantum computing service and data infrastructures with the common European data spaces and federated, secure cloud infrastructures announced in the Communication from the Commission of 19 February 2020 on 'A European Strategy for Data', for seamless service provisioning to a wide range of public and private users across Europe.	(33) The Joint Undertaking should hyper-connect all the supercomputers and data infrastructures it will own or co-own with state-of-the-art networking technologies, making them widely accessible across the Union, ***especially for SMEs, start ups in the R&D phase and researchers,*** and should interconnect and federate its supercomputing and quantum computing data infrastructure, as well as national, regional and other computing infrastructures with a common platform***, in order to form a strong European ecosystem in which each cloud user has potential access to high-end computing resources as well as to scientific and commercial data repositories, while providing resources to bring interactive processing closer to High Performance Computing systems and large-scale databases. Interactive computing services are also needed to make collaborative working easier***. The Joint Undertaking should also ensure the interconnection of the federated, secure supercomputing, and quantum computing service and data infrastructures ***the European Open Science Cloud (EOSC), GAIA — X and*** with the common European data spaces and federated, secure cloud infrastructures announced in the Communication from the Commission of 19 February 2020 on 'A European Strategy for Data', for seamless service provisioning to a wide range of public and private users across Europe ***and support the use of open standards, open source software, hardware and platforms and, where appropriate, open APIs in an effort to achieve interoperability***.

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Amendment 25

Proposal for a regulation

Recital 34

Text proposed by the Commission	*Amendment*
(34) Horizon Europe and the Digital Europe Programme should respectively contribute to the closing of the research and innovation divide within the Union and to deploying wide-range supercomputing capabilities by promoting synergies with the European ***Structural and Investments Funds (ESIF***). Therefore, the Joint Undertaking should seek to develop close interactions with ***the ESIF, which can*** specifically ***help*** to strengthen local, regional and national research and innovation capabilities.	(34) Horizon Europe and the Digital Europe Programme should respectively contribute to the closing of the research and innovation divide within the Union and to deploying wide-range supercomputing capabilities by promoting synergies with ***all relevant programmes and policies, with a particular emphasis on*** the European ***Regional Development Fund (ERDF), the European Social Fund Plus (ESF+), the European Maritime and Fisheries Fund (EMFF) and the European Agricultural Fund for Rural Development (EAFRD), as well as the Recovery and Resilience Facility (RRF), InvestEU and other EIB programmes***. Therefore, the Joint Undertaking should seek to develop close interactions with ***those funds, with the purpose of*** specifically ***helping*** to strengthen local, regional and national research and innovation capabilities.

Thursday 24 June 2021

Amendment 26

Proposal for a regulation

Recital 35

Text proposed by the Commission	*Amendment*
(35) The Joint Undertaking should provide a favourable framework for Participating States that are Member States to use ***their ESIF*** for the acquisition of High Performance Computing and quantum computing and data infrastructures and their interconnection. The use of ***ESIF*** in the Joint Undertaking activities is essential for developing ***in*** the Union an integrated, federated, secure and hyper-connected world-class High Performance Computing, quantum computing service and data infrastructure***, since the benefits for such infrastructure extend well beyond the users of the Member States***. If Member States decide to use ***ESIF*** for contributing to the acquisition costs of the supercomputers and quantum computers of the Joint Undertaking, ***the Joint Undertaking*** should ***take into consideration the Union's share of ESIF of this Member State, while accounting only the*** national ***ESIF share as national contribution*** to the budget of the Joint Undertaking.	(35) The Joint Undertaking should provide a favourable framework for Participating States that are Member States to use ***financial contributions to ESIF, RRF and under programmes co-financed by the ERDF, the ESF+, the EMFF and the EAFRD*** for the acquisition of High Performance Computing and quantum computing and data infrastructures and their interconnection. The use of ***financial contributions*** in the Joint Undertaking activities is essential for developing ***across*** the Union an integrated***, excellence-based***, federated, secure and hyper-connected world-class High Performance Computing, quantum computing service and data infrastructure. If Member States decide to use ***those financial contributions*** for contributing to the acquisition costs of the supercomputers and quantum computers of the Joint Undertaking, ***those contributions*** should ***be considered*** national ***contributions*** to the budget of the Joint Undertaking***, provided that Article 106 and other applicable provisions of Regulation (EU) …/… ([1a]) and the fund-specific regulations are complied with***. ***([1a]) Regulation (EU) …/… of the European Parliament and of the Council of … laying down common provisions on the European Regional Development Fund, the European Social Fund Plus, the Cohesion Fund, the Just Transition Fund and the European Maritime, Fisheries and Aquaculture Fund and financial rules for those and for the Asylum, Migration and Integration Fund, the Internal Security Fund and the Instrument for Financial Support for Border Management and Visa Policy (OJ L …, …, p. …).***

Amendment 27

Proposal for a regulation

Recital 35 a (new)

Text proposed by the Commission	*Amendment*
	(35a) It should be possible for the RRF funds to complement the actions funded by the Joint Undertaking, provided that support under the RRF is additional to the one provided by the Union funds of the Joint Undertaking and it does not cover the same cost, despite of the fact that RRF should not be accounted as national contribution to the budget of the Joint Undertaking.

Thursday 24 June 2021

Amendment 28

Proposal for a regulation

Recital 36

Text proposed by the Commission	*Amendment*
(36) The Union's contribution from the Digital Europe Programme funds should partly cover the acquisition costs of high-end supercomputers, quantum computers, industrial-grade supercomputers and mid-range supercomputers to align with the Joint Undertaking's objective to contribute to the pooling of resources for equipping the Union with top-class supercomputers and quantum computers. The complementary costs of these supercomputers and quantum computers should be covered by the Participating States, or the Private Members or consortia of private partners. The share of the Union's access time to these supercomputers or quantum computers should be directly proportional to the financial contribution of the Union made for the acquisition of these supercomputers and quantum computers and should not exceed 50 % of the total access time of these supercomputers or quantum computers.	(36) The Union's contribution from the Digital Europe Programme funds should partly cover the acquisition costs of high-end supercomputers, quantum computers, ***at least mid-range*** industrial-grade supercomputers and mid-range supercomputers to align with the Joint Undertaking's objective to contribute to the pooling of resources for equipping the Union with top-class supercomputers and quantum computers. The complementary costs of these supercomputers and quantum computers should be covered by the Participating States, or the Private Members or consortia of private partners. The share of the Union's access time to these supercomputers or quantum computers should be directly proportional to the financial contribution of the Union made for the acquisition of these supercomputers and quantum computers and should not exceed 50 % of the total access time of these supercomputers or quantum computers.

Thursday 24 June 2021

Amendment 29

Proposal for a regulation

Recital 37

Text proposed by the Commission	*Amendment*
(37) The Joint Undertaking should be the owner of the high-end supercomputers and quantum computers it has acquired. The operation of each high-end supercomputer or quantum computer should be entrusted to a hosting entity. The hosting entity should be able to represent a single Participating State that is a Member State or a hosting consortium of Participating States. The hosting entity should be in position to provide an accurate estimate and to verify the operating costs of the supercomputer, by ensuring, for example, the functional separation, and to the extent possible, the physical separation of the Joint Undertaking's high-end supercomputers or quantum computers and any national or regional computing systems it operates. The hosting entity should be selected by the Governing Board of the Joint Undertaking ('Governing Board') following ***a*** call for expression of interest evaluated by independent experts. Once a hosting entity is selected, the Participating State where the hosting entity is established or the hosting Consortium should be able to decide to call for other Participating States to join and contribute to the funding of the high-end supercomputer or quantum computer to be installed in the selected hosting entity. If additional Participating States join the selected hosting Consortium, this should be without prejudice to the Union's access time to the supercomputers. The contributions of the Participating States in a hosting Consortium to the supercomputer or quantum computer should be translated into shares of access time to that supercomputer or quantum computer. The Participating States should agree among themselves the distribution of their share of access time to the supercomputer or the quantum computer.	(37) The Joint Undertaking should be the owner of the high-end supercomputers and quantum computers it has acquired. The operation of each high-end supercomputer or quantum computer should be entrusted to a hosting entity. The hosting entity should be able to represent a single Participating State that is a Member State or a hosting consortium of Participating States. The hosting entity should be in position to provide an accurate estimate and to verify the operating costs of the supercomputer, by ensuring, for example, the functional separation, and to the extent possible, the physical separation of the Joint Undertaking's high-end supercomputers or quantum computers and any national or regional computing systems it operates. The hosting entity should ***develop a sustainable energy management plan for the acquired infrastructure. The hosting entity should*** be selected by the Governing Board of the Joint Undertaking ('Governing Board') following ***an open fair and transparent*** call for expression of interest evaluated by independent experts. Once a hosting entity is selected, the Participating State where the hosting entity is established or the hosting Consortium should be able to decide to call for other Participating States to join and contribute to the funding of the high-end supercomputer or quantum computer to be installed in the selected hosting entity. If additional Participating States join the selected hosting Consortium, this should be without prejudice to the Union's access time to the supercomputers. The contributions of the Participating States in a hosting Consortium to the supercomputer or quantum computer should be translated into shares of access time to that supercomputer or quantum computer. The Participating States should agree among themselves the distribution of their share of access time to the supercomputer or the quantum computer.

Thursday 24 June 2021

Amendment 30

Proposal for a regulation

Recital 39

Text proposed by the Commission	*Amendment*
(39) The Joint Undertaking should jointly with Participating States acquire the mid-range supercomputers. The operation of each mid-range supercomputer should be entrusted to a hosting entity. The hosting entity should be able to represent a single Participating State that is a Member State or a hosting consortium of Participating States. The Joint Undertaking should own the part that corresponds to the Union's share of financial contribution to the acquisition costs from Digital Europe Programme funds. The hosting entity should be selected by the Governing Board following ***a*** call for expression of interest evaluated by independent experts. The share of the Union's access time to each mid-range supercomputer should be directly proportional to the financial contribution of the Union from Digital Europe Programme funds to the acquisition costs of that mid-range supercomputer. The Joint Undertaking should be able to transfer its ownership to the hosting entity or when it is being wound up. The hosting entity should reimburse the Joint Undertaking the residual value of the supercomputer.	(39) The Joint Undertaking should jointly with Participating States acquire the mid-range supercomputers. The operation of each mid-range supercomputer should be entrusted to a hosting entity. The hosting entity should be able to represent a single Participating State that is a Member State or a hosting consortium of Participating States. The Joint Undertaking should own the part that corresponds to the Union's share of financial contribution to the acquisition costs from Digital Europe Programme funds. The hosting entity should be selected by the Governing Board following ***an open, fair and transparent*** call for expression of interest evaluated by independent experts. The share of the Union's access time to each mid-range supercomputer should be directly proportional to the financial contribution of the Union from Digital Europe Programme funds to the acquisition costs of that mid-range supercomputer. The Joint Undertaking should be able to transfer its ownership to the hosting entity or when it is being wound up. The hosting entity should reimburse the Joint Undertaking the residual value of the supercomputer.

Amendment 31

Proposal for a regulation

Recital 39 a (new)

Text proposed by the Commission	*Amendment*
	(39a) To promote a balanced distribution across the Union of EuroHPC supercomputers and the emergence of an easily accessible federated infrastructure ecosystem, specific eligibility conditions should apply in the calls for expression of interest of a EuroHPC supercomputer to a Participating State which is already hosting a EuroHPC supercomputer.

Thursday 24 June 2021

Amendment 32

Proposal for a regulation

Recital 40

Text proposed by the Commission	*Amendment*
(40) The Joint Undertaking should be able to acquire together with the Private Members or a consortium of private partners industrial-grade supercomputers. The operation of each such supercomputer should be entrusted to an existing hosting entity. The hosting entity should be able to associate itself with the Private Members or the consortium of private partners for the acquisition and operation of such supercomputer. The Joint Undertaking should own the part that corresponds to the Union's share of financial contribution to the acquisition costs from Digital Europe Programme funds. The hosting entity and its associated Private Members or consortium of private partners should be selected by the Governing Board following a call for expression of interest evaluated by independent experts. The share of the Union's access time to such supercomputer should be directly proportional to the financial contribution of the Union from Digital Europe Programme funds to the acquisition costs of that industrial-grade supercomputer. The Joint Undertaking should be able to reach an agreement with the Private Members or the consortium of private partners to sell such supercomputer to another entity or decommission it. Alternatively, the Joint Undertaking should be able to transfer the ownership of such supercomputer to the Private Members or the consortium of private partners. In this case or when the Joint Undertaking is being would-up, the Private Members or the consortium of private partners should reimburse the Joint Undertaking the residual value of the Union's share of the supercomputer. In the case the Joint Undertaking and the Private Members or the consortium of private partners decide to proceed to the decommissioning of the supercomputer after the full depreciation of its operation, such costs should be covered by the Private Members or the consortium of private partners.	(40) The Joint Undertaking should be able to acquire together with the Private Members or a consortium of private partners industrial-grade supercomputers***, that are at least mid-range***. The operation of each such supercomputer should be entrusted to an existing hosting entity. The hosting entity should be able to associate itself with the Private Members or the consortium of private partners for the acquisition and operation of such supercomputer. The Joint Undertaking should own the part that corresponds to the Union's share of financial contribution to the acquisition costs from Digital Europe Programme funds. The hosting entity and its associated Private Members or consortium of private partners should be selected by the Governing Board following a ***transparent, open and competitive procedure and the*** call for expression of interest ***should be*** evaluated by independent experts. The share of the Union's access time to such supercomputer should be directly proportional to the financial contribution of the Union from Digital Europe Programme funds to the acquisition costs of that industrial-grade supercomputer. The Joint Undertaking should be able to reach an agreement with the Private Members or the consortium of private partners to sell such supercomputer to another entity or decommission it. Alternatively, the Joint Undertaking should be able to transfer the ownership of such supercomputer to the Private Members or the consortium of private partners. In this case or when the Joint Undertaking is being would-up, the Private Members or the consortium of private partners should reimburse the Joint Undertaking the residual value of the Union's share of the supercomputer. In the case the Joint Undertaking and the Private Members or the consortium of private partners decide to proceed to the decommissioning of the supercomputer after the full depreciation of its operation, such costs should be covered by the Private Members or the consortium of private partners.

Thursday 24 June 2021

Amendment 33

Proposal for a regulation

Recital 41

Text proposed by the Commission	*Amendment*
(41) ***For*** industrial-grade supercomputers the Joint Undertaking should take into account the specific needs of industrial users, for example access procedures, quality and type of services, protection of data, protection of industrial innovation, and intellectual property, usability, trust, and other confidentiality and security requirements.	(41) ***In the medium-term, the Joint Undertaking should aim to define EuroHPC supercomputers and should ensure that they comply with the highest possible security, in particular cybersecurity, accessibility and usability standards and requirements, in particular for industry and SMEs. For the*** industrial-grade supercomputers the Joint Undertaking should take into account the specific needs of industrial users, for example access procedures, quality and type of services, protection of data, protection of industrial innovation, and intellectual property, usability, trust, and other confidentiality and security requirements.

Amendment 34

Proposal for a regulation

Recital 42

Text proposed by the Commission	*Amendment*
(42) The design and operation of the supercomputers supported by the Joint Undertaking should ***take into consideration*** energy efficiency ***and*** environmental sustainability, using for example low-power ***technology***, dynamic power-saving and re-use techniques ***like*** advanced cooling and heat recycling.	(42) The design and operation of the supercomputers supported by the Joint Undertaking should ***always address*** energy efficiency, environmental sustainability ***and circularity, contributing to carbon-neutrality, including by using renewable power purchasing agreements, taking into consideration the added value of their integration into the comprehensive energy system in place where they are located***, using for example ***electricity produced from renewable sources,*** low-power ***technologies***, dynamic power-saving and re-use techniques***, such as*** advanced cooling and heat recycling.

Amendment 35

Proposal for a regulation

Recital 42 a (new)

Text proposed by the Commission	*Amendment*
	(42a) The Joint Undertaking should address the growing demand for energy caused by the increased use of High Performance Computing infrastructure, by streamlining the its objectives with relevant strategies, policy and legislation in the energy sector. Furthermore, by combining power-efficient servers with sophisticated workload management tools, the Joint Undertaking will improve efficiency both on-premises and in the cloud, reducing the costs and the carbon footprint of data centres.

Thursday 24 June 2021

Amendment 36

Proposal for a regulation

Recital 44

Text proposed by the Commission	*Amendment*
(44) User allocation of access time to the supercomputers of the Joint Undertaking should be free of charge for public users. It should also be free of charge for private users for their applications related to research and innovation activities ***funded by Horizon Europe or the Digital Europe Programme***, as well as for private innovation activities of SMEs***, where appropriate***. Such allocation of access time should primarily be based on ***open*** calls for expression of interest launched by the Joint Undertaking and evaluated by independent experts. With the exception of SME users undertaking private innovation activities, all users benefiting from free-of-charge access time to the supercomputers of the Joint Undertaking should adopt an open science approach and disseminate knowledge gained through this access, in accordance with the Horizon Europe Regulation. User allocation of access time for economic activities other than private innovation activities of SMEs (which face particular market failures), should be granted on a pay-per-use basis***, based on market*** prices. Allocation of access time for such economic activities should be allowed but limited and the level of the fee to be paid should be established by the Governing Board. The access rights should be allocated in ***a*** transparent manner. The Governing Board should define specific rules to grant access time free of charge, where appropriate, and without a call for expression of interest to initiatives that are considered strategic either by the Union or by the Governing Board. Representative examples of strategic initiatives of the Union include: Destination Earth, the Human Brain Project Flagship, the '1+ Million Genomes' initiative, the common European data spaces operating in domains of public interest, and in particular the health data space, the High Performance Computing Centres of Excellence and Competence Centres, the Digital Innovation Hubs, etc. Upon Union's request, the Joint Undertaking should grant direct access time on a temporary or permanent basis to strategic initiatives and existing or future application platforms that it considers essential for providing health-related or other crucial emergency support services for the public good, ***to*** emergency and crisis management situations or to cases that the Union considers essential for its security and defence. The Joint Undertaking should be allowed to carry out some limited economic activities for commercial purposes. Access should be granted to users residing, established or located in an EU Member State or a country associated to the Digital Europe Programme and to Horizon Europe. The access rights should be equitable to any user and allocated in ***a*** transparent manner. The Governing Board should define and monitor the access rights to the Union's share of access time for each supercomputer.	(44) User allocation of access time to the supercomputers of the Joint Undertaking should be free of charge for public users. It should also be free of charge for private users***, including NGOs and individuals,*** for their applications related to research and innovation activities, as well as for private innovation activities of SMEs ***and start-ups, based on fair and transparent criteria and procedures***. Such allocation of access time should primarily be based on ***periodic, peer-reviewed and open as well as transparent*** calls for expression of interest launched by the Joint Undertaking and evaluated by independent experts ***with a view to ensuring balanced and appropriate allocation of High Performance Computing resources***. With the exception of SME ***and start-ups*** users undertaking private innovation activities, all users benefiting from free-of-charge access time to the supercomputers of the Joint Undertaking should adopt an open science approach and disseminate knowledge gained through this access, in accordance with the Horizon Europe Regulation. User allocation of access time for economic activities other than private innovation activities of SMEs ***and start-ups*** (which face particular market failures), should be granted on a pay-per-use basis ***on cost-based*** prices. Allocation of access time for such economic activities should be allowed but limited and the level of the fee to be paid should be established by the Governing Board ***in a transparent manner***. The access rights should be allocated in ***an open and*** transparent manner. The Governing Board should define specific rules to grant access time free of charge, where appropriate, and without a call for expression of interest to initiatives that are considered strategic either by the Union or by the Governing Board. Representative examples of strategic initiatives of the Union include: Destination Earth, the Human Brain Project Flagship, the '1+ Million Genomes' initiative, the common European data spaces operating in domains of public interest, and in particular the health data space, the High Performance Computing Centres of Excellence and Competence Centres, the Digital Innovation Hubs, etc. Upon Union's request, the Joint Undertaking should grant direct access time on a temporary or permanent basis to strategic initiatives and existing or future application platforms that it considers essential for providing health-related or other crucial emergency support services for the public good, emergency and crisis management situations or to cases that the Union considers essential for its security and defence. The Joint Undertaking should be allowed to carry out some limited economic activities for commercial purposes. Access should be granted to users residing, established or located in an EU Member State or a country associated to the Digital Europe Programme and to Horizon Europe. The access rights should be equitable to any user and allocated in ***an open and*** transparent manner. The Governing Board should define and monitor the access rights to the Union's share of access time for each supercomputer.

Thursday 24 June 2021

Amendment 37

Proposal for a regulation

Recital 47

Text proposed by the Commission	*Amendment*
(47) The Joint Undertaking governance should be assured by two bodies: a Governing Board, and an Industrial and Scientific Advisory Board. The Governing Board should be composed of representatives of the Union and Participating States. The Governing Board should be responsible for strategic policy making and funding decisions related to the activities of the Joint Undertaking, including all the public procurement activities. The Industrial and Scientific Advisory Board should include representatives of academia and industry as users and technology suppliers. It should provide independent advice to the Governing Board on the strategic research and innovation agenda, on the acquisition and operation of the supercomputers owned by the Joint Undertaking, the capability building and widening activities programme and the federation, connectivity and international cooperation activities programme.	(47) The Joint Undertaking governance should be assured by two bodies: a Governing Board, and an Industrial and Scientific Advisory Board. The Governing Board should be composed of representatives of the Union and Participating States. The Governing Board should be responsible for strategic policy making and funding decisions related to the activities of the Joint Undertaking, including all the public procurement activities. The Industrial and Scientific Advisory Board should include representatives of academia and industry as users and technology suppliers. It should provide independent advice to the Governing Board on the strategic research and innovation agenda, on the acquisition and operation of the supercomputers owned by the Joint Undertaking, the capability building and widening activities programme and the federation, connectivity and international cooperation activities programme. ***The Joint Undertaking's governance framework should also include a user forum providing independent advice on user needs to the governing board and other groups. The user forum should establish the specific criteria and selection process for the members it appoints.***

Thursday 24 June 2021

Amendment 38

Proposal for a regulation

Recital 47 a (new)

Text proposed by the Commission	*Amendment*
	(47a) Since the supercomputers are demand-oriented and user-driven, the Joint Undertaking should maintain a permanent dialogue with civil society and users of High Performance Computing infrastructures. The continuous, effective involvement of users, particularly to implement the co-design approach needed to strengthen the uptake, in particular for commercial applications, by industry, SMEs, and innovative companies and start-ups, can have a high added value and multiplier effect. The user-side input should be actively sought through a regular consultation process with end-users from the public and private sectors. For that purpose, the Governing Board should set up a working group for users (the 'user forum') to assist in the identification of the enhanced quality of service, usability, trust, and security requirements of public and private users. The user forum should include representatives from civil society, industrial and public users, Union social partners, SMEs and independent European value chain actors in software development.

Amendment 39

Proposal for a regulation

Recital 49

Text proposed by the Commission	*Amendment*
(49) The Union's financial contribution should be managed in accordance with the principle of sound financial management and with the relevant rules on indirect management set out in Regulation (EU, Euratom) 2018/1046. Rules applicable for the Joint Undertaking to enter into public procurement procedures should be set in its financial rules.	(49) The Union's financial contribution should be managed in accordance with the principle of sound financial management ***and administrative simplification*** and with the relevant rules on indirect management set out in Regulation (EU, Euratom) 2018/1046. Rules applicable for the Joint Undertaking to enter into public procurement procedures should be set in its financial rules.

Thursday 24 June 2021

Amendment 40

Proposal for a regulation

Recital 50

Text proposed by the Commission	*Amendment*
(50) To foster an innovative ***and*** competitive European High Performance Computing and quantum computing ecosystem of recognised excellence, the Joint Undertaking should make appropriate use of the procurement and grant instruments, including joint procurement, pre-commercial procurement and public procurement of innovative solutions.	(50) To foster an innovative, competitive***, and resilient*** European High Performance Computing and quantum computing ecosystem of recognised excellence***, and widely spread across the Union***, the Joint Undertaking should make appropriate use of the procurement and grant instruments, including joint procurement, pre-commercial procurement and public procurement of innovative solutions. ***The use of such procurement and grant instruments should facilitate the involvement of SMEs, microenterprises and startups, and their clusters. The Joint Undertaking will take into consideration the possibility of upgrading existing facilities to guarantee state-of-the-art technologies and a world-class ecosystem in High Performance Computing and quantum computing technologies and applications.***

Amendment 41

Proposal for a regulation

Recital 53

Text proposed by the Commission	*Amendment*
(53) Participation in indirect actions funded by the Joint Undertaking should comply with Regulation (EU) No xxx establishing Horizon Europe. The Joint Undertaking should, moreover, ensure the consistent application of those rules based on relevant measures adopted by the Commission. In order to ensure appropriate co-financing of indirect actions by the Participating States, in compliance with Regulation (EU) No xxx establishing Horizon Europe, the Participating States should contribute an amount at least equal to the reimbursement provided by the Joint Undertaking for the eligible costs incurred by beneficiaries in the actions. To this effect, the maximum funding rates set out in the annual work programme of the Joint Undertaking in accordance with Article 30 of Regulation (EU) No xxx establishing Horizon Europe should be fixed accordingly.	(53) Participation in indirect actions funded by the Joint Undertaking should comply with Regulation (EU) No xxx establishing Horizon Europe. The Joint Undertaking should, moreover, ensure the consistent application of those rules based on relevant measures adopted by the Commission. In order to ensure appropriate co-financing of indirect actions by the Participating States, in compliance with Regulation (EU) No xxx establishing Horizon Europe, the Participating States should contribute an amount at least equal to the reimbursement provided by the Joint Undertaking for the eligible costs incurred by beneficiaries in the actions. To this effect, the maximum funding rates set out in the annual work programme of the Joint Undertaking in accordance with Article 30 of Regulation (EU) No xxx establishing Horizon Europe should be fixed accordingly ***by the Governing Board***.

Thursday 24 June 2021

Amendment 42

Proposal for a regulation

Recital 53 a (new)

Text proposed by the Commission	*Amendment*
	(53a) In order to ensure the right balance of stakeholders' participation in the actions funded by the Joint Undertaking, it is necessary to allow a differentiation of reimbursement rates, in particular for SMEs, start-ups and not-for-profit legal entities. The application of differentiated rates should not increase administrative complexity of the projects and should be done in the simplest and most effective way. The reimbursement rates should be indicated in the work programme.

Amendment 43

Proposal for a regulation

Recital 56

Text proposed by the Commission	*Amendment*
(56) The financial interests of the Union and of the other members of the Joint Undertaking should be protected by proportionate measures throughout the expenditure cycle, including the prevention, detection and investigation of irregularities, the recovery of lost, wrongly paid or incorrectly used funds and, where appropriate, the application of administrative and financial penalties in accordance with Regulation (EU, Euratom) 2018/1046.	(56) The financial interests of the Union and of the other members of the Joint Undertaking should be protected by proportionate ***and simple*** measures throughout the expenditure cycle, including the prevention, detection and investigation of irregularities, the recovery of lost, wrongly paid or incorrectly used funds and, where appropriate, the application of administrative and financial penalties in accordance with Regulation (EU, Euratom) 2018/1046.

Amendment 44

Proposal for a regulation

Recital 57

Text proposed by the Commission	*Amendment*
(57) The Joint Undertaking should operate in ***an*** open and transparent way providing all relevant information in a timely manner as well as promoting its activities, including information and dissemination activities, to the wider public. The rules of procedure of the bodies of the Joint Undertaking should be made publicly available.	(57) The Joint Undertaking should operate in ***a simple, flexible,*** open and transparent way providing all relevant information in a timely manner as well as promoting its activities, including information and dissemination activities, to the wider public. The rules of procedure of the bodies of the Joint Undertaking should be made publicly available.

Thursday 24 June 2021

Amendment 45

Proposal for a regulation

Recital 58

Text proposed by the Commission	*Amendment*
(58) For the purpose of simplification, the administrative burden should be reduced for all parties. Double audits and disproportionate amounts of documentation and reporting should be avoided.	(58) For the purpose of simplification, the administrative burden should be reduced for all parties ***in particular for the Joint Undertaking and its beneficiaries***. Double audits and disproportionate amounts of documentation and reporting should be avoided. ***The Joint Undertaking should provide a favourable framework to support Participating States. In order to maximise the impact of indirect actions, the specificities of the Joint Undertaking, with its tripartite model, should be taken into consideration with regard to the management of financial contributions from Participating States.***

Amendment 46

Proposal for a regulation

Recital 61

Text proposed by the Commission	*Amendment*
(61) The Commission's internal auditor should exercise the same powers over the Joint Undertaking as those exercised in respect of the Commission.	(61) The Commission's internal auditor should exercise the same powers over the Joint Undertaking as those exercised in respect of the Commission***, while avoiding an increase of the administrative burden on the Joint Undertaking or its beneficiaries***.

Amendment 47

Proposal for a regulation

Recital 62

Text proposed by the Commission	*Amendment*
(62) The Commission, the Joint Undertaking, the Court of Auditors and the European Anti-Fraud Office (OLAF) and the European Public Prosecutor's Office (EPPO) should get access to all necessary information and the premises to conduct audits and investigations on the grants, contracts and agreements signed by the Joint Undertaking.	(62) The Commission, the Joint Undertaking, the Court of Auditors and the European Anti-Fraud Office (OLAF) and the European Public Prosecutor's Office (EPPO) should get access to all necessary information and the premises to conduct audits and investigations on the grants, contracts and agreements signed by the Joint Undertaking***, while seeking maximum administrative simplification for the beneficiaries and a decrease of their administrative burden***.

Thursday 24 June 2021

Amendment 48

Proposal for a regulation

Article 2 — paragraph 1 — point 2

Text proposed by the Commission	*Amendment*
(2) 'access time' means the computing time of a supercomputer that is made available to a user or a group of users to execute their computer programmes;	(2) 'access time' means the computing time of a supercomputer that is made available ***through a transparent and open process*** to a user or a group of users to execute their computer programmes;

Amendment 49

Proposal for a regulation

Article 2 — paragraph 1 — point 4

Text proposed by the Commission	*Amendment*
(4) 'Centre of Excellence' in HPC means ***an*** initiative to promote the use of upcoming extreme performance computing capabilities enabling user communities in collaboration with other HPC stakeholders to scale up existing parallel codes towards exascale and extreme scaling performance;	(4) 'Centre of Excellence' in HPC means ***a collaborative*** initiative ***selected through an open, transparent and competitive call for proposals*** to promote the use of upcoming extreme performance computing capabilities enabling user communities in collaboration with other HPC stakeholders to scale up existing parallel codes towards exascale and extreme scaling performance;

Amendment 50

Proposal for a regulation

Article 2 — paragraph 1 — point 5

Text proposed by the Commission	*Amendment*
(5) 'co-design' is a collective approach between technology suppliers and users engaged in a collaborative and iterative design process for developing new ***technology, application and*** systems;	(5) 'co-design' is a collective approach between technology suppliers and users engaged in a collaborative and iterative design process for developing new ***technologies, applications,*** systems***, services, skills and competencies***;

Thursday 24 June 2021

Amendment 51

Proposal for a regulation

Article 2 — paragraph 1 — point 6

Text proposed by the Commission	*Amendment*
(6) 'Competence Centre' in High Performance Computing (HPC) means a legal entity established in a Participating State providing users from industry, ***including SMEs***, academia, and public administrations with access on demand to the supercomputers and to the latest High Performance Computing technologies, tools, applications and services, and offering expertise, skills, training, networking and outreach;	(6) '***Union*** Competence Centre' in High Performance Computing (HPC) means a ***Union*** legal entity ***selected through an open and transparent process and*** established in a Participating State providing users from industry, ***in particular SMEs and start-ups***, academia, and public administrations with access on demand to the supercomputers and to the latest High Performance Computing technologies, tools, applications and services, and offering expertise, skills, training, networking and outreach;

Amendment 52

Proposal for a regulation

Article 2 — paragraph 1 — point 16

Text proposed by the Commission	*Amendment*
(16) 'industrial-grade supercomputer' means ***a*** supercomputer specifically designed with security, confidentiality and data integrity requirements for industrial users that are more demanding than for a scientific usage;	(16) 'industrial-grade supercomputer' means ***at least a mid-range*** supercomputer specifically designed with security, confidentiality and data integrity requirements for industrial users that are more demanding than for a scientific usage;

Amendment 53

Proposal for a regulation

Article 2 — paragraph 1 — point 19 a (new)

Text proposed by the Commission	*Amendment*
	(19a)' multiannual strategic programme' means a document laying out strategy and plans for achieving the objectives of the Joint Undertaking;

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Amendment 54

Proposal for a regulation

Article 2 — paragraph 1 — point 20

Text proposed by the Commission	*Amendment*
(20) 'national High Performance Computing competence centre' means a legal entity established in a Participating State that is a Member State, associated with the national supercomputing centre of that Member State, providing users from industry, ***including SMEs***, academia, and public administrations with access on demand to the supercomputers and to the latest High Performance Computing technologies, tools, applications and services, and offering expertise, skills, training, networking and outreach;	(20) 'national High Performance Computing competence centre' means a legal entity ***or a consortium of legal entities, selected through an open and transparent process and*** established in a Participating State that is a Member State, associated with the national supercomputing centre of that Member State, providing users from industry, ***in particular SMEs and start-ups***, academia, and public administrations with access on demand to the supercomputers and to the latest High Performance Computing technologies, tools, applications and services, and offering expertise, skills, training, networking and outreach;

Amendment 55

Proposal for a regulation

Article 3 — paragraph 1

Text proposed by the Commission	*Amendment*
(1) The mission of the Joint Undertaking shall be to develop, deploy, extend and maintain in the Union a world leading federated, secure and hyper-connected supercomputing, quantum computing, service and data infrastructure ecosystem; support the ***production*** of innovative and competitive supercomputing systems based on a supply chain that will ensure components, technologies and knowledge limiting the risk of disruptions and the development of a wide range of applications optimised for these systems; and, widen the use of this supercomputing infrastructure to a large number of public and private users, and support the development of ***key*** skills for European science and industry.	(1) The mission of the Joint Undertaking shall be to develop, deploy, extend and maintain in the Union a world leading federated, secure and hyper-connected supercomputing, quantum computing, service and data infrastructure ecosystem***, thereby contributing to achieving a scientific, digital and industrial leadership of the Union in the world***; support the ***development, deployment and operation, preferably within the Union,*** of innovative and competitive supercomputing systems based on a supply chain that will ensure ***critical raw materials and state of the art*** components, technologies and knowledge limiting the risk of disruptions and the development of a wide range of applications optimised for these systems ***based on the principles of trust, openness, security, interoperability and portability***; and, widen the use of this supercomputing infrastructure to a large number of ***Union's*** public and private users***, with particular attention to SMEs and start-ups, including those in the R&D phase***, and support the development of ***advanced digital*** skills***, competencies and knowledge*** for European ***society*** science and industry.

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Amendment 56

Proposal for a regulation

Article 3 — paragraph 2 — point a

Text proposed by the Commission	*Amendment*
(a) to contribute to the implementation of Regulation (EU) No xxx establishing Horizon Europe and in particular Article 3 thereof, to deliver scientific, economic, environmental, technological and societal impact from the Union's investments in research and innovation, so as to strengthen the scientific and technological bases of the Union, deliver on the Union strategic priorities, contribute to the realisation of EU objectives and policies, and contribute to tackling global challenges, ***including*** the Sustainable Development Goals by following the principles of the Agenda 2030 and the Paris Agreement;	(a) to contribute to the implementation of Regulation (EU) No xxx establishing Horizon Europe and in particular Article 3 thereof, to deliver scientific, economic, environmental, technological and societal impact from the Union's investments in research and innovation, so as to strengthen the scientific and technological bases of the Union, deliver on the Union strategic priorities, contribute to the realisation of EU objectives and policies, ***including those related to the European Green Deal, the European Recovery Plan, the European data strategy, digital, SME and industrial strategies, achieving Europe's strategic autonomy while preserving an open economy, accelerate the social, ecological and economic transitions*** and contribute to tackling global challenges, ***addressing*** the Sustainable Development Goals by following the principles of the Agenda 2030 and the Paris Agreement;

Amendment 57

Proposal for a regulation

Article 3 — paragraph 2 — point b

Text proposed by the Commission	*Amendment*
(b) to develop close cooperation and ensure coordination with other European Partnerships, including through joint calls, as well as seek synergies with relevant activities and programmes at Union, national, and regional level, in particular with those supporting the deployment of innovative solutions, education and regional development***, *where relevant***;	(b) to develop close cooperation and ensure ***synergies and*** coordination with other European Partnerships, including through joint calls, as well as seek ***sequential, parallel or integrated*** synergies with relevant activities and programmes at Union, national, and regional ***and local*** level, in particular with those supporting the deployment of innovative solutions, ***and modelling platforms,*** education and regional development;

Amendment 58

Proposal for a regulation

Article 3 — paragraph 2 — point c

Text proposed by the Commission	*Amendment*
(c) to develop, deploy, extend and maintain in the Union an integrated, demand-oriented and user-driven hyper-connected world-class supercomputing and data infrastructure;	(c) to develop, deploy, extend and maintain in the Union an integrated, demand-oriented and user-driven hyper-connected world-class supercomputing and data infrastructure ***which helps strengthen the Union's strategic autonomy***;

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Amendment 59

Proposal for a regulation

Article 3 — paragraph 2 — point d

Text proposed by the Commission	*Amendment*
(d) to federate the hyper-connected supercomputing and data infrastructure and interconnect it with the European data spaces and cloud ecosystem for providing computing and data services to a wide range of public and private users in Europe;	(d) to federate the hyper-connected supercomputing and data infrastructure***, through high-quality network infrastructures in all Member States,*** and interconnect it with the European data spaces***, in particular with the European Health Data Space to ensure the availability of large, high-quality health data sets,*** and cloud ecosystem for providing computing and data services to a wide ***and geographically diverse*** range of public and private users in Europe***, based on the principles of trust, openness, security, interoperability and portability***;

Amendment 60

Proposal for a regulation

Article 3 — paragraph 2 — point d a (new)

Text proposed by the Commission	*Amendment*
	(da) to promote scientific excellence and support the uptake and systematic use of research and innovation results generated within the Union;

Amendment 61

Proposal for a regulation

Article 3 — paragraph 2 — point e

Text proposed by the Commission	*Amendment*
(e) to further develop and support a highly competitive and innovative supercomputing and data ecosystem in Europe contributing to the ***standing*** and technological autonomy of the Union in the digital economy, capable to autonomously produce computing technologies and architectures and their integration on leading computing systems, and advanced applications optimised for these systems;	(e) to further develop and support a highly competitive***, social, sustainable, energy-efficient*** and innovative***, interconnected, interoperable and secure*** supercomputing and data ecosystem in Europe contributing to the ***scientific*** and technological ***leadership and the standing strategic*** autonomy of the Union in the digital ***transition, while reducing dependence on foreign technology, particularly in critical infrastructure components, while preserving an open*** economy***, maintaining global leadership in HPC applications***, capable to autonomously produce ***and own world-class*** computing technologies and architectures and their integration on leading computing systems, and advanced applications optimised for these systems;

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Amendment 62

Proposal for a regulation

Article 3 — paragraph 2 — point f

Text proposed by the Commission	*Amendment*
(f) to widen the use of supercomputing services ***and*** the development of ***key*** skills that European science and industry need.	(f) to ***promote, facilitate and*** widen the use of supercomputing services ***in all sectors and to contribute to*** the development of ***advanced digital*** skills***, competencies and knowledge*** that European science***, society, economy, environment*** and industry need ***to achieve autonomy and global leadership, with an emphasis on enhancing women's and girls' participation in STEM subjects through their involvement and employment in related areas and reducing the gender gap in the digital sector***.

Amendment 63

Proposal for a regulation

Article 3 — paragraph 3

Text proposed by the Commission	*Amendment*
(3) The Joint Undertaking shall contribute to safeguarding the interests of the Union when procuring supercomputers and supporting the development of High Performance Computing technologies, systems and applications. It shall enable a co-design approach for the acquisition of world-class supercomputers, while safeguarding the security of the supply chain of procured technologies and systems. It shall contribute to the Union's ***technological*** autonomy by supporting the development of technologies and applications reinforcing the European HPC technology supply chain and promoting their integration in supercomputing systems that address a large number of societal and industrial needs.	(3) The Joint Undertaking shall contribute to safeguarding the interests of the Union when procuring supercomputers and supporting the development of ***world-class*** High Performance Computing technologies, systems and applications. It shall enable a co-design approach for the acquisition of world-class supercomputers, while safeguarding the security of the supply chain of procured technologies and systems ***and ensure the highest standards of cybersecurity applicable to supercomputers***. It shall contribute to the Union's ***strategic*** autonomy***, while preserving an open economy, particularly in critical areas, increasing the competitiveness of European industry,*** by supporting the development of technologies and applications reinforcing the European HPC ***energy-efficient*** technology supply chain and promoting their integration in supercomputing systems that address a large number of societal and industrial needs. ***It shall support Europe's global leadership in various industries, especially in high value-added and technology-intensive products and services to provide critical components, technology, and skills aiming to close the technological gap with third countries.***

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Amendment 64

Proposal for a regulation

Article 3 — paragraph 3 a (new)

Text proposed by the Commission	*Amendment*
	(3a) The Joint Undertaking shall implement its mission and objectives in a clear, simple and flexible way in order to increase attractiveness towards industry, SMEs and all relevant stakeholders.

Amendment 65

Proposal for a regulation

Article 3 — paragraph 3 b (new)

Text proposed by the Commission	*Amendment*
	(3b) The Joint Undertaking shall minimise any risk involved in handling, storing and processing of personal data in the supercomputing infrastructures and shall comply with the Regulation (EU) 2016/679 and other relevant Union legislation. It shall also ensure that High Performance Computers are exclusively accessible to entities that comply with the same rules and that its resources are open to scientists from all Participating States.

Amendment 66

Proposal for a regulation

Article 4 — paragraph 1 — point b

Text proposed by the Commission	*Amendment*
(b) Infrastructure pillar, encompassing the activities for the acquisition, deployment, and operation of the secure, hyper-connected world-class supercomputing, quantum computing and data infrastructure, including the promotion of the uptake and systematic use of research and innovation results generated ***in the Union***.	(b) Infrastructure pillar, encompassing the activities for the acquisition***, upgrades***, deployment, and operation of the secure, hyper-connected world-class supercomputing, quantum computing and ***European*** data infrastructure, including ***upgrading the existing infrastructure and*** the promotion of the uptake and systematic use ***within the Union*** of research and innovation results generated ***by the Joint Undertaking***.

Amendment 67

Proposal for a regulation

Article 4 — paragraph 1 — point c — introductory part

Text proposed by the Commission	*Amendment*
(c) Federation of supercomputing services pillar, covering all activities for providing EU-wide access to federated, secure supercomputing and data resources and services throughout Europe for the research and scientific community, industry (***including*** SMEs) and the public sector. In particular this includes:	(c) Federation of supercomputing services pillar, covering all activities for providing EU-wide access to federated, secure supercomputing and data resources and services throughout Europe for the research and scientific community, industry (***in particular*** SMEs) and the public sector***, in cooperation with PRACE and GEANT among others***. In particular this includes:

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Amendment 68

Proposal for a regulation

Article 4 — paragraph 1 — point c — point i

Text proposed by the Commission	*Amendment*
(i) support to the interconnection of the High Performance Computing, quantum computing and data resources owned fully or partially by the EuroHPC Joint Undertaking or made available on a voluntary basis by the Participating States;	(i) support to the interconnection of the High Performance Computing, quantum computing and data resources owned fully or partially by the EuroHPC Joint Undertaking or made available on a voluntary basis by the Participating ***or the Observer*** States;

Amendment 69

Proposal for a regulation

Article 4 — paragraph 1 — point c — point ii

Text proposed by the Commission	*Amendment*
(ii) support to the interconnection of the supercomputing, and quantum computing data infrastructures with the Union's common European data spaces and federated, secure cloud infrastructures;	(ii) support to the interconnection ***and interoperability*** of the supercomputing, and quantum computing data infrastructures with the Union's common European data spaces and federated, secure cloud ***and data*** infrastructures***, while including specific requirements for cybersecurity, open data, data portability and where possible the use of open source software and hardware, without jeopardising data protection and privacy***;

Amendment 70

Proposal for a regulation

Article 4 — paragraph 1 — point c — point iii

Text proposed by the Commission	*Amendment*
(iii) support to the development, acquisition and operation of a platform for the seamless federation and secure service provisioning of supercomputing and quantum computing service and data infrastructure, establishing a one-stop shop access point for any supercomputing or data service managed by the Joint Undertaking, providing any user with a single point of entry.	(iii) support to the development, acquisition and operation of a platform for the seamless federation and secure service provisioning of supercomputing and quantum computing service and data infrastructure, establishing a one-stop shop access point for any supercomputing or data service managed by the Joint Undertaking, providing any user with a single point of entry ***and establishing an effective vulnerability management programme and a data sharing resource that enables users of the high-performance computing resources to transfer, share and discuss their data***.

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Amendment 71

Proposal for a regulation

Article 4 — paragraph 1 — point d — introductory part

Text proposed by the Commission	*Amendment*
(d) Technology pillar, addressing ***the activities for supporting an*** ambitious research and innovation ***agenda*** for developing a world-class, competitive and innovative supercomputing ecosystem addressing hardware and software technologies, and their integration into computing systems, covering the whole scientific and industrial value chain, for ensuring ***technological*** autonomy of the Union***. Focus*** shall ***be on*** energy-efficient High Performance Computing technologies. Activities shall address inter alia:	(d) Technology pillar, addressing ambitious research and innovation ***activities*** for developing a world-class, competitive***, trustworthy, sustainable*** and innovative supercomputing ecosystem ***across the Union*** addressing hardware and software technologies, and their integration into computing systems, covering the whole scientific and industrial value chain ***from research to prototyping, piloting and demonstration***, for ensuring ***strategic*** autonomy ***while preserving the open economy*** of the Union ***and strengthening Union's research capacities. Trustworthy supercomputing requires the creation of safety, legal, ethical, security and interoperability standards aiming at preventing bias. The implementation of the pillar*** shall ***contribute to the development of the relevant European industrial sectors so that they can cover the entire production chain (design, manufacturing, implementation and application), take in due consideration energy consumption and focus on the most*** energy-efficient High Performance Computing technologies***, with particular emphasis on renewable-based solutions***. Activities shall address inter alia:

Amendment 72

Proposal for a regulation

Article 4 — paragraph 1 — point d — point i

Text proposed by the Commission	*Amendment*
i) low-power micro-processing components, and related technologies such as novel algorithms, software codes, tools, and environments;	(i) low-power micro-processing components***, power-efficient and power-enhancing nanoelectronics***, and related technologies such as novel algorithms, software codes, tools, ***middleware solutions, parallel programming and computing resource optimisation solutions*** and environments;

Amendment 73

Proposal for a regulation

Article 4 — paragraph 1 — point d — point iii

Text proposed by the Commission	*Amendment*
(iii) technologies ***and*** systems for the interconnection and operation of classical supercomputing systems with other, often complementary computing technologies, such as neuromorphic ***or*** quantum computing and ensure their ***effective*** operation.	(iii) technologies, systems ***and algorithms*** for the interconnection and operation of classical supercomputing systems with other, often complementary computing technologies, such as neuromorphic, quantum computing ***or other emerging technologies*** and ensure their ***secure and reliable*** operation.

Amendment 74

Proposal for a regulation

Article 4 — paragraph 1 — point d — point iii a (new)

Text proposed by the Commission	*Amendment*
	(iii a) research and innovation activities for the constant improvement of the capacity of the supercomputing hardware systems, the technological development of low-power supercomputing hardware systems and the development of the next generation of chip technology.

Amendment 75

Proposal for a regulation

Article 4 — paragraph 1 — point e — introductory part

Text proposed by the Commission	*Amendment*
(e) Application pillar, addressing activities for achieving and maintaining European excellence in key computing and data applications and codes for science, industry (***including SMEs***) and the public sector, including;	(e) Application pillar, addressing activities for achieving and maintaining European excellence ***and leadership*** in key computing and data applications and codes for science, industry (***in particular SMEs and start-ups***) and the public sector, ***while paying special attention to geographical diversity and gender balance,*** including;

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Amendment 76

Proposal for a regulation

Article 4 — paragraph 1 — point e — point i

Text proposed by the Commission	*Amendment*
(i) applications for public and private users that exploit the capabilities of high-end supercomputers and their convergence with advanced digital technologies such as artificial intelligence, high performance data analytics, cloud technologies, etc. through the co-design, development and optimisation of High Performance Computing-enabled large-scale and emerging lead-market codes and applications;	(i) applications***, algorithms and software development*** for public and private users that exploit the capabilities of high-end supercomputers and their convergence with advanced digital technologies such as artificial intelligence, ***computer modelling and simulation, privacy enhancing applications,*** high performance data analytics, cloud technologies***, quantum computing***, etc. through the co-design, development and optimisation of High Performance Computing-enabled large-scale and emerging lead-market codes and applications***, potentially benefitting from open cooperation models like open source***;

Amendment 77

Proposal for a regulation

Article 4 — paragraph 1 — point e — point ii

Text proposed by the Commission	*Amendment*
ii) support, among others, to Centres of Excellence in High Performance Computing applications and large-scale High Performance Computing-enabled pilot demonstrators and test-beds for big data applications and services in a wide range of scientific and industrial sectors.	(ii) support, among others, to Centres of Excellence in High Performance Computing applications and large-scale High Performance Computing-enabled pilot demonstrators and test-beds for big data applications and services in a wide range of scientific***, environmental*** and industrial sectors***, while excluding personal data and activities that lead to de-anonymisation of personal data***.

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Amendment 78

Proposal for a regulation

Article 4 — paragraph 1 — point f

Text proposed by the Commission	*Amendment*
(f) Widening usage and skills pillar, aiming at fostering excellence in supercomputing, quantum computing, and data use and skills taking into account synergies with other programs and instruments, in particular Digital Europe Program, widening the scientific and industrial use of supercomputing resources and data applications and fostering the industrial access and use of supercomputing and data infrastructures for innovation adapted to industrial needs; and providing Europe with a knowledgeable leading scientific community and a skilled workforce for scientific leadership and digital transformation of industry, including the support and networking of national High Performance Computing Competence Centres and High Performance Computing Centres of Excellence	(f) Widening usage and skills pillar, aiming at fostering excellence ***and developing skills, capabilities and competencies*** in supercomputing, quantum computing, and data use and skills***, including skills for procurements made in the framework of this Regulation,*** taking into account synergies with other programs and instruments, in particular Digital Europe Program, widening the scientific and industrial use***, in particular by SMEs and start-ups,*** of supercomputing resources and data applications and fostering the industrial access and use of supercomputing and data infrastructures for innovation adapted to industrial needs; and providing Europe with a knowledgeable leading scientific community and a skilled workforce for scientific leadership and digital transformation of industry, including the support and networking of national High Performance Computing Competence Centres and High Performance Computing Centres of Excellence***; all activities in this pillar should take into consideration gender diversity and the need to increase the participation of women, also via the creation of specific programmes to reduce the additional barriers that they face, while ensuring that application knowledge and expertise have the widest geographical coverage. Specific actions on the activities above may include:***

Amendment 79

Proposal for a regulation

Article 4 — paragraph 1 — point f — point i (new)

Text proposed by the Commission	*Amendment*
	(i) defining a set of career paths, job placements involving the use of HPC in real environment, HPC hackathons and skillsets required to leverage EuroHPC to promote sustainable growth in Europe, by providing relevant, mission-driven research and application problems, funding for internships and scholarships, such as Master's programmes in HPC and computational science and partnerships with industry and academia;

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Amendment 80

Proposal for a regulation

Article 4 — paragraph 1 — point f — point ii (new)

Text proposed by the Commission	*Amendment*
	(ii) working with academia and business sector leaders to describe and develop curricula that will produce new experts in supercomputing and quantum computing with the necessary skillsets and engineering knowledge;

Amendment 81

Proposal for a regulation

Article 4 — paragraph 1 — point f — point iii (new)

Text proposed by the Commission	*Amendment*
	(iii) working with front-runners in the computing and education communities to adapt and test new, more flexible methods of education and workforce development that enable rapid knowledge advancement and in-career transitions to HPC-related positions;

Amendment 82

Proposal for a regulation

Article 4 — paragraph 1 — point f — point iv (new)

Text proposed by the Commission	*Amendment*
	(iv) industry-specific training, including hands on training and solving real use cases, and SME-tailored courses and support offerings like staff exchange programmes with research and academia.

Amendment 83

Proposal for a regulation

Article 4 — paragraph 2 a (new)

Text proposed by the Commission	*Amendment*
	(2a) When implementing the activities listed in paragraphs 1 and 2, the Joint Undertaking shall pay constant attention to geographical and gender diversity, as well as to the involvement of newcomers on the market such as start-ups and SMEs. In addition, all pillars shall take in due account the complementarities with other supercomputing initiatives at Union level, such as PRACE and GEANT.

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Amendment 84

Proposal for a regulation

Article 5 — paragraph 1 — introductory part

Text proposed by the Commission	*Amendment*
(1) The Union financial contribution to the Joint Undertaking including EFTA appropriations shall be up to EUR [XXXXX], including up to ***EUR [XXXXX]*** for administrative costs, distributed as follows:	(1) The Union financial contribution to the Joint Undertaking including EFTA appropriations shall be up to EUR [XXXXX], including up to ***5 %*** for administrative costs ***and technical assistance***, distributed as follows:

Amendment 85

Proposal for a regulation

Article 5 — paragraph 3

Text proposed by the Commission	*Amendment*
(3) Additional Union funds complementing the contribution referred to in paragraph 1 may be allocated to the Joint Undertaking to support activities for the research and innovation and deployment of innovative solutions.	(3) Additional Union funds complementing the contribution referred to in paragraph 1 may be allocated to the Joint Undertaking to support activities for the research and innovation and deployment of innovative solutions ***within the Union***.

Amendment 86

Proposal for a regulation

Article 5 — paragraph 6

Text proposed by the Commission	*Amendment*
(6) The Union's financial contribution referred to in point (a) of paragraph 1 shall be used for the Joint Undertaking to provide financial support to indirect actions as defined in Article xxx of the Horizon Europe Regulation***, corresponding to the*** research and innovation agenda.	(6) The Union's financial contribution referred to in point (a) of paragraph 1 shall be used for the Joint Undertaking to provide financial support to indirect actions as defined in Article xxx of the Horizon Europe Regulation ***through open, competitive and transparent procedures, along the priorities identified in*** research and innovation agenda.

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Amendment 87

Proposal for a regulation

Article 5 — paragraph 7

Text proposed by the Commission	*Amendment*
(7) The Union's financial contribution referred to in point (b) of paragraph 1 shall be used for capability building across the whole Union, including the acquisition, and operation of High Performance Computers, quantum computers or quantum simulators, the federation of the High Performance Computing and quantum computing service and data infrastructure and the widening of its use, and the development of advanced skills and training.	(7) The Union's financial contribution referred to in point (b) of paragraph 1 shall be used for capability building across the whole Union, including the acquisition, ***upgrades of only supercomputers owned by the Joint Undertaking*** and operation of High Performance Computers, quantum computers or quantum simulators, the federation of the High Performance Computing and quantum computing service and data infrastructure and the widening of its use, and the development of advanced skills and training***, accessible also to citizens living in geographically isolated and disadvantaged areas and taking in due account the need to improve the gender equality***.

Amendment 88

Proposal for a regulation

Article 5 — paragraph 8

Text proposed by the Commission	*Amendment*
(8) The Union's financial contribution referred to in point (c) of paragraph 1 shall be paid from the appropriations in the general budget of the Union allocated to the Connecting Europe Facility and shall be used for the interconnection of the High Performance Computing and data resources and the creation of an integrated pan-European hyper-connected High Performance Computing and data infrastructure.	(8) The Union's financial contribution referred to in point (c) of paragraph 1 shall be paid from the appropriations in the general budget of the Union allocated to the Connecting Europe Facility and shall be used for the interconnection of the High Performance Computing and data resources ***established within the European territory*** and the creation of an integrated pan-European hyper-connected High Performance Computing and data infrastructure.

Amendment 89

Proposal for a regulation

Article 6 — paragraph 1

Text proposed by the Commission	*Amendment*
Contributions from Union programmes other than those referred to in Article 5(1) that are part of a Union co-financing to a programme implemented by one of the Participating States shall not be accounted for in the calculation of the Union maximum financial contribution referred to in Article 5.	Contributions from Union programmes other than those referred to in Article 5(1) that are part of a Union co-financing to a programme implemented by one of the Participating States shall not be accounted for in the calculation of the Union maximum financial contribution referred to in Article 5 ***and shall not cover the same costs***.

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Amendment 90

Proposal for a regulation

Article 6 — paragraph 1 a (new)

Text proposed by the Commission	*Amendment*
	Financial contributions under programmes co-financed by the Recovery and Resilience Facility, ERDF, the ESF+, the EMFAF and the EAFRD may be considered as a contribution of the Participating State, provided that the relevant provisions of the Regulation (EU) …/… [Common Provisions Regulation for 2021-2027] and the fund-specific regulations are complied with.

Amendment 91

Proposal for a regulation

Article 7 — paragraph 1

Text proposed by the Commission	*Amendment*
(1) The Participating States shall make a total contribution of at least equal to the amount of the Union contribution referred to in Article 5 of this Regulation, including up to ***EUR [XXXXX] contribution*** for administrative costs[equal to the amount of the Union contribution for administrative costs referred to in Article 5 of this Regulation]. The Participating States shall arrange among them how they will deliver their collective contribution.	(1) The Participating States shall make a total contribution of at least equal to the amount of the Union contribution referred to in Article 5 of this Regulation, including up to ***5 %*** for administrative costs ***and technical assistance*** [equal to the amount of the Union contribution for administrative costs ***and technical assistance*** referred to in Article 5 of this Regulation]. The Participating States shall arrange among them how they will deliver their collective contribution.

Amendment 92

Proposal for a regulation

Article 7 — paragraph 1 a (new)

Text proposed by the Commission	*Amendment*
	(1a) The Joint Undertaking shall provide a favourable framework for supporting Participating States. In order to maximise the impact of indirect actions, the specificities of the Joint Undertaking, with its tripartite model, shall be taken into consideration with regard to the management of financial contributions from Participating States.

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Amendment 93

Proposal for a regulation

Article 7 — paragraph 2

Text proposed by the Commission	*Amendment*
(2) The Private Members of the Joint Undertaking shall make or arrange for their constituent entities and affiliated entities to make contributions for at least EUR [XXXXX] to the Joint Undertaking, including up to ***EUR [XXXXX]*** for administrative costs [equal to 22.22 % of the amount of the Union contribution for administrative costs referred to in Article 5 of this Regulation].	(2) The Private Members of the Joint Undertaking shall make or arrange for their constituent entities and affiliated entities to make contributions for at least EUR [XXXXX] to the Joint Undertaking, including up to ***5 %*** for administrative costs ***and technical assistance*** [equal to 22.22 % of the amount of the Union contribution for administrative costs ***and technical assistance*** referred to in Article 5 of this Regulation].

Amendment 94

Proposal for a regulation

Article 8 — paragraph 1

Text proposed by the Commission	*Amendment*
(1) EuroHPC supercomputers shall be located in a Participating State that is a Member State. A Participating State shall only host more than one EuroHPC supercomputer if there are more than ***two*** years between ***their*** acquisition ***or if they are from differing technologies (classical/quantum)***.	(1) EuroHPC supercomputers shall be located in a Participating State that is a Member State. A Participating State shall only host more than one EuroHPC supercomputer if there are more than ***four*** years between ***the selection dates following the calls for expression of interest. In the case of*** acquisition ***of quantum computers and simulators or in the case of upgrade of a EuroHPC supercomputer with quantum accelerators owned by the Joint Undertaking, that period shall be two years***.

Amendment 95

Proposal for a regulation

Article 8 — paragraph 5 — introductory part

Text proposed by the Commission	*Amendment*
(5) Following ***a*** call for expression of interest, the hosting entity referred to in paragraph 2 of this Article and the corresponding Participating State where the hosting entity is established or the corresponding hosting consortium shall be selected by the Governing Board through a fair and transparent process based, inter alia, on the following criteria:	(5) Following ***an open, fair and transparent*** call for expression of interest, the hosting entity referred to in paragraph 2 of this Article and the corresponding Participating State where the hosting entity is established or the corresponding hosting consortium shall be selected by the Governing Board through a fair and transparent process based, inter alia, on the following criteria:

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Amendment 96

Proposal for a regulation

Article 8 — paragraph 5 — point d

Text proposed by the Commission	*Amendment*
(d) quality of the hosting facility's physical and IT infrastructure, its security and its connectivity with the rest of the Union;	(d) quality of the hosting facility's physical***, energy*** and IT infrastructure, its security and its connectivity with the rest of the Union;

Amendment 97

Proposal for a regulation

Article 8 — paragraph 5 — point d a (new)

Text proposed by the Commission	*Amendment*
	(da) provision of an energy management plan that examines the availability of an adequate access to clean affordable energy, including through renewable power purchase agreements, and a strategy to increase energy-efficiency of the installations;

Amendment 98

Proposal for a regulation

Article 8 — paragraph 7 a (new)

Text proposed by the Commission	*Amendment*
	(7a) The Joint Undertaking shall take into account the energy efficiency first principle, in order to accelerate energy savings and efficiency research, stimulate constant technological advancements to improve power-efficiency in both new and existing system designs, and actively research, develop and test novel energy-efficient approaches including in particular fully renewables-based approaches that improve the GHG emission and environmental footprint of supercomputers.

Amendment 99

Proposal for a regulation

Article 9 — paragraph 2 — point k

Text proposed by the Commission	*Amendment*
(k) the obligation of the hosting entity to submit by 31 January of each year to the Governing Board an audit report and data on the use of access time in the previous financial year;	(k) the obligation of the hosting entity to submit by 31 January of each year to the Governing Board an audit report and data on the use of access time in the previous financial year; ***the audit report shall be made publicly available within three months of approval by the Governing Board;***

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Amendment 100

Proposal for a regulation

Article 10 — paragraph 3

Text proposed by the Commission	*Amendment*
(3) The selection of the supplier of the high-end supercomputer shall address the security of the supply chain.	(3) The selection of the supplier of the high-end supercomputer shall ***assess compliance with the general system specifications, including user needs, and ensure excellence in European research and innovation. It shall also*** address the security of the supply chain.

Amendment 101

Proposal for a regulation

Article 11 — paragraph 3

Text proposed by the Commission	*Amendment*
(3) The selection of the supplier of the quantum computers and quantum simulators shall address the security of the supply chain.	(3) The selection of the supplier of the quantum computers and quantum simulators shall ***assess compliance with the general system specifications, including user needs, and ensure excellence in European research and innovation. It shall also*** address the security of the supply chain.

Amendment 102

Proposal for a regulation

Article 12 — paragraph 1

Text proposed by the Commission	*Amendment*
(1) The Joint Undertaking shall acquire together with the Private Members, or a consortium of private partners, supercomputers, or partitions of EuroHPC supercomputers, primarily destined for use by industry, and shall own them or co-own them with the Private Members or a consortium of private partners.	(1) The Joint Undertaking shall acquire together with the Private Members, or a consortium of private partners, ***at least mid-range*** supercomputers, or partitions of EuroHPC supercomputers, primarily destined for use by industry, and shall own them or co-own them with the Private Members or a consortium of private partners.

Amendment 103

Proposal for a regulation

Article 12 — paragraph 3

Text proposed by the Commission	*Amendment*
(3) The selection of the supplier of an industrial-grade EuroHPC supercomputer shall address the security of the supply chain.	(3) The selection of the supplier of an industrial-grade EuroHPC supercomputer shall ***assess compliance with the general system specifications, including user needs, and ensure excellence in European research and innovation. It shall also*** address the security of the supply chain.

Amendment 104

Proposal for a regulation

Article 13 — paragraph 2

Text proposed by the Commission	*Amendment*
(2) The Union financial contribution referred to in Article 5 (1) shall cover up to ***35 %*** of the acquisition costs of the mid-range supercomputers. The remaining total cost of ownership of the mid-range supercomputers shall be covered by the Participating State where the hosting entity is established or the Participating States in the hosting consortium, possibly supplemented by the contributions referred to in Article 6.	(2) The Union financial contribution referred to in Article 5 (1) shall cover up to ***50 %*** of the acquisition ***costs plus up to 50 % of the operating*** costs of the mid-range supercomputers. The remaining total cost of ownership of the mid-range supercomputers shall be covered by the Participating State where the hosting entity is established or the Participating States in the hosting consortium, possibly supplemented by the contributions referred to in Article 6.

Amendment 105

Proposal for a regulation

Article 13 — paragraph 3

Text proposed by the Commission	*Amendment*
(3) The selection of the supplier of the mid-range supercomputer shall address the security of the supply chain.	(3) The selection of the supplier of the mid-range supercomputer shall ***assess compliance with the general system specifications, including user needs, and ensure excellence in European research and innovation. It shall also*** address the security of the supply chain.

Amendment 106

Proposal for a regulation

Article 15 — paragraph 2

Text proposed by the Commission	*Amendment*
(2) The share of the Union's access time to each mid-range supercomputer shall be directly proportional to the financial contribution of the Union referred to in Article 5(1) to the acquisition cost of the supercomputer and shall not exceed 35 % of the total access time of the supercomputer.	***deleted***

Amendment 107

Proposal for a regulation

Article 15 — paragraph 5

Text proposed by the Commission	*Amendment*
(5) The Governing Board shall define the access rights to the Union's share of access time to the EuroHPC supercomputers.	(5) The Governing Board shall define ***and make publicly available*** the access rights to the Union's share of access time to the EuroHPC supercomputers.

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Amendment 108

Proposal for a regulation

Article 15 — paragraph 6

Text proposed by the Commission	*Amendment*
(6) Use of the Union's share of access time to the EuroHPC supercomputers shall be free of charge for the users from the public sector referred to in Article 14(4) of this Regulation. It will also be free of charge for industrial users for applications related to research and innovation activities ***funded by Horizon Europe or the Digital Europe Programme*** and for private innovation activities of SMEs, where appropriate. As a guiding principle, allocation of access time for such activities shall be based on a fair and transparent peer review process defined by the Governing Board following continuously open calls for expression of interest launched by the Joint Undertaking.	(6) Use of the Union's share of access time to the EuroHPC supercomputers shall be ***transparent and*** free of charge for the users from the public sector referred to in Article 14(4) of this Regulation. It will also be free of charge for industrial users***, NGOs, students and other individuals*** for applications related to ***open*** research and innovation activities and for private innovation activities of SMEs, where appropriate. As a guiding principle, allocation of access time for such activities shall be based on a fair and transparent peer review process defined by the Governing Board following continuously open calls for expression of interest launched by the Joint Undertaking.

Amendment 109

Proposal for a regulation

Article 15 — paragraph 8

Text proposed by the Commission	*Amendment*
(8) The Governing Board shall define specific rules for access conditions that depart from the guiding principles referred to in paragraph 6 of this Article. These concern the allocation of access time for projects and activities considered as strategic either by the Union or by the Governing Board.	(8) The Governing Board shall define specific ***and transparent*** rules for access conditions that depart from the guiding principles referred to in paragraph 6 of this Article. These concern the allocation of access time for projects and activities considered as strategic either by the Union or by the Governing Board.

Amendment 110

Proposal for a regulation

Article 15 — paragraph 9

Text proposed by the Commission	*Amendment*
(9) Upon request of the Union, the Executive Director shall grant direct access to the EuroHPC supercomputers to initiatives that the Union considers essential for providing health-related or other crucial emergency support services for the public good, to emergency and crisis management situations or to cases that the Union considers essential for its security and defence. The modalities and conditions for the implementation of such access shall be defined in the access conditions adopted by the Governing Board.	(9) Upon request of the Union, the Executive Director shall grant direct access to the EuroHPC supercomputers to initiatives that the Union considers essential for providing ***environment,*** health-related or other crucial emergency support services for the public good, to emergency and crisis management situations or to cases that the Union considers essential for its security and defence. The modalities and conditions for the implementation of such access shall be defined in the access conditions adopted by the Governing Board ***taking into account that research and innovation activities will have an exclusive focus on civil applications, recognising that there are areas of dual-use technology***.

Thursday 24 June 2021

Amendment 111

Proposal for a regulation

Article 16 — paragraph 1

Text proposed by the Commission	*Amendment*
(1) Specific conditions shall apply to all industry users for commercial purposes. This service for commercial use shall be a pay-per-use service, based on market prices. The level of the fee shall be established by the Governing Board.	(1) Specific conditions shall apply to all industry users for commercial purposes. This service for commercial use shall be a pay-per-use service, based on market prices. The level of the fee shall be established by the Governing Board ***but shall not constitute an entry barrier, in particular for SMEs***.

Amendment 112

Proposal for a regulation

Article 16 — paragraph 2

Text proposed by the Commission	*Amendment*
(2) The fees generated by the commercial use of the Union's access time shall constitute revenue to the Joint Undertaking budget and shall be used to cover operational costs of the Joint Undertaking.	(2) The fees generated by the commercial use of the Union's access time shall constitute revenue to the Joint Undertaking budget and shall be used to cover operational costs of the Joint Undertaking ***and the operating costs of the EuroHPC supercomputers***.

Amendment 113

Proposal for a regulation

Article 16 — paragraph 3

Text proposed by the Commission	*Amendment*
(3) The access time allocated to commercial services shall not exceed 20 % of the Union's total access time of each EuroHPC supercomputer. The Governing Board shall decide on the allocation of the Union's access time for the users of commercial services, taking into account the outcome of the monitoring referred to in Article 15(10).	(3) The access time allocated to commercial services shall ***in principle*** not exceed 20 % of the Union's total access time of each EuroHPC supercomputer. The Governing Board shall decide on the ***maximum*** allocation of the Union's access time for the users of commercial services, taking into account the outcome of the monitoring referred to in Article 15(10).

Amendment 114

Proposal for a regulation

Article 18 — paragraph 6

Text proposed by the Commission	*Amendment*
(6) The staff resources shall be set out in the staff establishment plan of the Joint Undertaking, indicating the number of temporary posts by function group and by grade, as well as by the number of contract staff expressed in full-time equivalents, in accordance with its annual budget.	(6) The staff resources shall be set out in the staff establishment plan of the Joint Undertaking***, and shall adequately reflect the staff numbers and grades needed to ensure the highest standards of recruitments in the field***, indicating the number of temporary posts by function group and by grade, as well as by the number of contract staff expressed in full-time equivalents, in accordance with its annual budget.

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Amendment 115

Proposal for a regulation

Article 19 — paragraph 2

Text proposed by the Commission	*Amendment*
(2) The Governing Board shall adopt a decision laying down rules on the secondment of national experts to the Joint Undertaking and on the use of trainees.	(2) The Governing Board shall adopt a decision laying down rules on the secondment of national experts to the Joint Undertaking and on the use of trainees***, including on their remuneration***.

Amendment 116

Proposal for a regulation

Article 22 — paragraph 1

Text proposed by the Commission	*Amendment*
(1) The activities of the Joint Undertaking shall be subject to continuous monitoring and periodic reviews in accordance with its financial rules, to ensure the highest impact and excellence, as well as the most efficient use of resources. The outcomes of monitoring and periodic reviews shall feed into the evaluations of the Joint Undertaking as part of Horizon Europe evaluations.	(1) The activities of the Joint Undertaking shall be subject to continuous monitoring and periodic reviews in accordance with its financial rules, to ensure the highest impact and excellence, as well as the most efficient use of resources. ***Such monitoring and reviews shall not increase the administrative burden on the Joint Undertaking or its beneficiaries.*** The outcomes of monitoring and periodic reviews shall feed into the evaluations of the Joint Undertaking as part of Horizon Europe evaluations.

Amendment 117

Proposal for a regulation

Article 22 — paragraph 3

Text proposed by the Commission	*Amendment*
(3) Evaluations of the Joint Undertakings' operations shall be carried out in a timely manner to feed into the overall interim and final evaluations of Horizon Europe and the related decision-making process as specified in Article 47 of Regulation (EU) No xxx establishing Horizon Europe.	(3) Evaluations of the Joint Undertakings' operations shall be carried out in a timely manner ***and without increasing the administrative burden on the Joint Undertakings or its beneficiaries,*** to feed into the overall interim and final evaluations of Horizon Europe and the related decision-making process as specified in Article 47 of Regulation (EU) No xxx establishing Horizon Europe.

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Amendment 118

Proposal for a regulation

Article 22 — paragraph 4

Text proposed by the Commission	*Amendment*
(4) The Commission shall carry out an interim evaluation of each Joint Undertaking as part of the Horizon Europe interim evaluation, as specified in Article 47 of Regulation (EU) No xxx establishing Horizon Europe. This evaluation shall be performed with the assistance of independent experts on the basis of a transparent process once there is sufficient information available about the implementation of Horizon Europe, but no later than four years after the start of Horizon Europe implementation. The evaluations shall examine how the Joint Undertaking fulfils its mission according to its economic, technological, scientific, societal and policy objectives, including climate-related objectives, and evaluate the effectiveness, efficiency, relevance, coherence, and Union added value of its activities as part of Horizon Europe, its synergies and complementarities with relevant European, national and, where relevant, regional initiatives, including synergies with other parts of Horizon Europe (such as missions, clusters or thematic/specific programmes). Impacts achieved at Union and national level, taking into account the component of synergies and policy retrofitting will be given particular attention. The evaluations shall, where relevant, also include an assessment of the long-term scientific, societal, economic and policy-relevant impact of the Joint Undertaking and shall include an assessment of the most effective policy intervention mode for any future action, as well as the positioning of any possible renewal of the Joint Undertaking in the overall European Partnerships landscape and its policy priorities.	(4) The Commission shall carry out an interim evaluation of each Joint Undertaking as part of the Horizon Europe interim evaluation, as specified in Article 47 of Regulation (EU) No xxx establishing Horizon Europe ***and without increasing the administrative burden on the Joint Undertaking***. This evaluation shall be performed with the assistance of independent ***external*** experts on the basis of a transparent process once there is sufficient information available about the implementation of Horizon Europe, but no later than four years after the start of Horizon Europe implementation. The evaluations shall examine how the Joint Undertaking fulfils its mission according to its economic, technological, scientific, ***environmental,*** societal and policy objectives, including climate-related***, and health-related*** objectives, and evaluate the effectiveness, efficiency, relevance, coherence***, integrity***, and Union added value of its activities as part of Horizon Europe, its synergies and complementarities with relevant European, national and, where relevant, regional initiatives, including synergies with other parts of Horizon Europe (such as ***other European partnerships,*** missions, clusters or thematic/specific programmes). Impacts achieved at Union and national level, taking into account the component of synergies and policy retrofitting will be given particular attention. The evaluations shall, where relevant, also include an assessment of the long-term scientific, societal, ***environmental,*** economic and policy-relevant impact of the Joint Undertaking***, an assessment of the outreach and awareness raising progress, such as number of users,*** and shall include an assessment of the most effective policy intervention mode for any future action, as well as the positioning of any possible renewal ***or phasing out*** of the Joint Undertaking in the overall European Partnerships landscape and its policy priorities.

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Amendment 119

Proposal for a regulation

Article 22 — paragraph 6

Text proposed by the Commission	*Amendment*
(6) The Commission may carry out further evaluations of themes or topics of strategic relevance, with the assistance of external independent experts selected on the basis of a transparent process, to examine the progress made by the Joint Undertaking towards the objectives set, identify the factors contributing to the implementation of the activities and identify best practices. By carrying out those further evaluations, the Commission shall fully consider the administrative impact on the Joint Undertaking.	(6) ***Without increasing the administrative burden on Joint Undertaking,*** the Commission may carry out further evaluations of themes or topics of strategic relevance, with the assistance of external independent experts selected on the basis of a transparent process, to examine the progress made by the Joint Undertaking towards the objectives set, identify the factors contributing to the implementation of the activities and identify best practices. By carrying out those further evaluations, the Commission shall fully consider the administrative impact on the Joint Undertaking ***and shall in particular make best efforts to reduce the administrative burden and to ensure that the evaluation process is kept simple and fully transparent. Any evaluation shall be based on a sound assessment of policy options from the perspective of governance, including in particular the possibility to set adequate safeguards to ensure that the public interests are duly respected in all operations.***

Amendment 120

Proposal for a regulation

Article 22 — paragraph 7

Text proposed by the Commission	*Amendment*
(7) The Joint Undertaking shall perform periodic reviews of its activities to inform the interim and final evaluations of the Joint Undertaking as part of Horizon Europe evaluations referred to in Article 47 of Regulation (EU) No xxx establishing Horizon Europe.	(7) The Joint Undertaking shall perform periodic reviews of its activities ***with the minimum burden for the beneficiaries*** to inform the interim and final evaluations of the Joint Undertaking as part of Horizon Europe evaluations referred to in Article 47 of Regulation (EU) No xxx establishing Horizon Europe.

Amendment 121

Proposal for a regulation

Article 22 — paragraph 7 a (new)

Text proposed by the Commission	*Amendment*
	(7a) Reporting shall be in line with the standard Horizon Europe reporting requirements. The development of the reporting systems in the context of the strategic coordinating process shall also involve Member States and partnership representatives in order to ensure synchronisation and coordination of reporting and monitoring efforts, including on the division of data collection and reporting tasks.

Thursday 24 June 2021

Amendment 122

Proposal for a regulation

Article 25 — paragraph 1

Text proposed by the Commission	*Amendment*
(1) Ex-post audits of expenditure on actions funded by the Horizon Europe budget shall be carried out in accordance with in accordance with Article 48 of Regulation (EU) No xxx establishing Horizon Europe as part of the Horizon Europe indirect actions, in particular in line with the audit strategy referred to in Article 48(2) of that Regulation.	(1) Ex-post audits of expenditure on actions funded by the Horizon Europe budget shall be carried out ***without increasing the administrative burden on the Joint Undertaking or its beneficiaries*** in accordance with in accordance with Article 48 of Regulation (EU) No xxx establishing Horizon Europe as part of the Horizon Europe indirect actions, in particular in line with the audit strategy referred to in Article 48(2) of that Regulation.

Amendment 123

Proposal for a regulation

Article 25 — paragraph 2

Text proposed by the Commission	*Amendment*
(2) Ex-post audits of expenditure on activities funded by the Digital Europe budget shall be carried out by the Joint Undertaking in accordance with Article xxx of Regulation (EU) No xxx establishing Digital Europe Programme.	(2) Ex-post audits of expenditure on activities funded by the Digital Europe budget shall be carried out by the Joint Undertaking in accordance with Article xxx of Regulation (EU) No xxx establishing Digital Europe Programme***, without increasing the administrative burden on the Joint Undertaking or its beneficiaries***.

Amendment 124

Proposal for a regulation

Article 25 — paragraph 3

Text proposed by the Commission	*Amendment*
(3) Ex-post audits of expenditure on activities funded by the Connecting Europe Facility budget shall be carried out by the Joint Undertaking in accordance with Article xxx of Regulation (EU) No xxx establishing Connecting Europe Facility as part of the Connecting Europe Facility actions.	(3) Ex-post audits of expenditure on activities funded by the Connecting Europe Facility budget shall be carried out by the Joint Undertaking in accordance with Article xxx of Regulation (EU) No xxx establishing Connecting Europe Facility as part of the Connecting Europe Facility actions***, without increasing the administrative burden on the Joint Undertaking or its beneficiaries***.

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Amendment 125

Proposal for a regulation

Article 27 — paragraph 1

Text proposed by the Commission	*Amendment*
The Joint Undertaking shall ensure the protection of sensitive information the disclosure of which could damage the interests of its members or of participants in the activities of the Joint Undertaking.	***Without prejudice to Article 28,*** the Joint Undertaking shall ensure the protection of sensitive information the disclosure of which could damage the interests of its members or of participants in the activities of the Joint Undertaking.

Amendment 126

Proposal for a regulation

Article 30 — paragraph 2 a (new)

Text proposed by the Commission	*Amendment*
	(2a) In line with other European Partnerships that are co-funded by Horizon Europe, all data for projects submitted and funded by the Joint Undertaking shall be included in the single Horizon Europe database.

Amendment 127

Proposal for a regulation

Article 31 a (new)

Text proposed by the Commission	*Amendment*
	Article 31a
	Reimbursement rates
	By way of derogation from Article 30 of Regulation (EU) 2021/695, the Joint Undertaking may apply different reimbursement rates for the Union funding within an action depending on the type of participant, namely SMEs and not-for-profit legal entities, and the type of action. The reimbursement rates shall be indicated in the work programme.

Amendment 128

Proposal for a regulation

Article 35 — paragraph 1 — subparagraph 1 a (new)

Text proposed by the Commission	*Amendment*
	In order to ensure equal treatment of all supercomputers under Regulation (EU) 2018/1488 and under this Regulation, the Union financial contribution referred to in Article 11(2) of Regulation (EU) 2018/1488 shall cover up to 50 % of the acquisition costs plus up to 50 % of the operating costs. The rules on allocation of Union's access time referred to in Article 13(3) of Regulation (EU) 2018/1488 shall be adjusted accordingly.

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Amendment 129

Proposal for a regulation

Annex — Article 1 — paragraph 1 — point c

Text proposed by the Commission	*Amendment*
(c) initiate and manage the calls for expression of interest for hosting EuroHPC supercomputers and evaluate the offers received, with the support of independent external experts;	(c) initiate and manage the calls for expression of interest for hosting EuroHPC supercomputers ***in an open and transparent manner*** and evaluate the offers received, with the support of independent external experts;

Amendment 130

Proposal for a regulation

Annex — Article 1 — paragraph 1 — point h

Text proposed by the Commission	*Amendment*
(h) initiate open calls for proposals and award funding in accordance with Regulation (EU) xxx establishing Horizon Europe, and within the limits of available funds, to indirect actions, mainly in the form of grants;	(h) initiate open calls for proposals and award funding in accordance with Regulation (EU) xxx establishing Horizon Europe, and within the limits of available funds, to indirect actions, mainly in the form of grants***, promoting a gender-balanced participation***;

Amendment 131

Proposal for a regulation

Annex – Article 1 — paragraph 1 — point n

Text proposed by the Commission	*Amendment*
(n) develop close cooperation and ensure coordination with other European Partnerships, as well as operational synergies with other Joint Undertakings, including through centralisation of administrative functions;	(n) develop close cooperation and ensure coordination with other European Partnerships, as well as operational synergies with other Joint Undertakings, including through centralisation of administrative functions***, especially for common tasks and with the aim of optimising the use of resources***;

Amendment 132

Proposal for a regulation

Annex – Article 1 — paragraph 1 — point n a (new)

Text proposed by the Commission	*Amendment*
	(n a) ensuring joint activities with other relevant research and innovation initiatives at Union, national and regional level, will be crucial in achieving greater impact, ensuring the uptake of results and securing an optimum level of interconnections;

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Amendment 133

Proposal for a regulation

Annex – Article 1 — paragraph 1 — point o a (new)

Text proposed by the Commission	*Amendment*
	(o a) promote the involvement of SMEs in their activities and take measures ensuring information to SMEs, in line with the objectives of Horizon Europe;

Amendment 134

Proposal for a regulation

Annex – Article 2 — paragraph 1 — point b

Text proposed by the Commission	*Amendment*
(b) Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, [Montenegro], the Netherlands, [North Macedonia], Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, [Switzerland], [Turkey];	(b) Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, [***Malta], [***Montenegro], the Netherlands, [North Macedonia], Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, [Switzerland], [Turkey];

Amendment 135

Proposal for a regulation

Annex – Article 3 — paragraph 6

Text proposed by the Commission	*Amendment*
(6) Each Private Member shall inform the Joint Undertaking ***once per year*** of any significant changes in the composition of the Private Member. Where the Commission considers that the change in composition is likely to affect the Union's or the Joint Undertaking's interest on grounds of security or public order, it may propose to the Governing Board to terminate the membership of the concerned Private Member. The termination shall become effective and irrevocable within six months of the decision of the Governing Board or on the date specified in that decision, whichever is earlier.	(6) Each Private Member shall inform the Joint Undertaking ***without delay*** of any significant changes in the composition of the Private Member. Where the Commission considers that the change in composition is likely to affect the Union's or the Joint Undertaking's interest on grounds of security or public order, it may propose to the Governing Board to terminate the membership of the concerned Private Member. The termination shall become effective and irrevocable within six months of the decision of the Governing Board or on the date specified in that decision, whichever is earlier.

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Amendment 136

Proposal for a regulation

Annex – Article 6 — paragraph 5 — introductory part

Text proposed by the Commission	*Amendment*
(5) For those tasks referred to in Article 7(4) points (f), (g) and (h) of these Statutes, and for each EuroHPC supercomputer, the voting rights of the Participating States shall be distributed in proportion to their committed financial contributions and to their in-kind contributions to that supercomputer until either its ownership is transferred to the hosting entity in accordance with Article 8(3) of this Regulation or until it is sold or decommissioned; the in-kind contributions shall only be taken into account if they have been certified ex-ante by an independent expert or auditor.	(5) For those tasks referred to in Article 7(4) points (f), (g) and (h) of these Statutes, and for each EuroHPC supercomputer, the voting rights of the Participating States shall be distributed in proportion to their committed financial contributions and to their in-kind contributions to that supercomputer until either its ownership is transferred to the hosting entity in accordance with Article 8(3) of this Regulation or until it is sold or decommissioned; the in-kind contributions shall only be taken into account if they have been certified ex-ante by an independent expert or auditor***, using a simple, effective and transparent process***.

Amendment 137

Proposal for a regulation

Annex – Article 6 — paragraph 10 — subparagraph 2

Text proposed by the Commission	*Amendment*
Each observer State may appoint one delegate in the Governing Board, who shall receive all relevant documents and may participate in the deliberations of the Governing Board unless decided otherwise by the Governing Board on a case-by-case basis. ***Those delegates shall have no voting rights and shall ensure the confidentiality of sensitive information according to Article 27 of this Regulation and subject to the rules of conflict of interest.***	Each observer State may appoint one delegate in the Governing Board, who shall receive all relevant documents and may participate in the deliberations of the Governing Board unless decided otherwise by the Governing Board on a case-by-case basis.

Amendment 138

Proposal for a regulation

Annex – Article 6 — paragraph 14 a (new)

Text proposed by the Commission	*Amendment*
	(14a) Two or more representatives of the user forum, selected according to its rules of procedure, shall be invited to attend the meetings of the Governing Board as observers and shall take part in its deliberations, but shall not have voting rights.

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Amendment 139

Proposal for a regulation

Annex – Article 6 — paragraph 14 b (new)

Text proposed by the Commission	*Amendment*
	(14b) Observers attending the meetings of the Governing Board shall not have voting rights, shall ensure the confidentiality of sensitive information according to Article 27 of this Regulation and shall be subject to the rules on conflicts of interest.

Amendment 140

Proposal for a regulation

Annex – Article 7 — paragraph 3 — point j a (new)

Text proposed by the Commission	*Amendment*
	(j a) set up a working group as a user forum, with the purpose of advising the Governing Board on user requirements aspects, in accordance with the Governing Board's rules of procedure;

Amendment 141

Proposal for a regulation

Annex – Article 7 — paragraph 3 — point j b (new)

Text proposed by the Commission	*Amendment*
	(j b) lay down rules and specific criteria for the selection, appointment and dismissal of members of the user forum and of the advisory groups set up in accordance with points (j) and (k) including considerations of gender and geographical diversity, and approve the rules of procedure laid down autonomously by the user forum and these advisory groups; specific user groups should be addressed through the user forum, including access for students from participating member states in order to further future careers in supercomputing. To that end, the selection criteria shall provide that at least two Master's or PhD students are represented in the user forum. European academies may be involved in the selection of the students;

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Amendment 142

Proposal for a regulation

Annex – Article 8 — paragraph 1 — introductory part

Text proposed by the Commission	*Amendment*
(1) The Commission shall propose a list of candidates for Executive Director after consultation of the members other than the Union of the Joint Undertaking. For the purpose of such consultation the members other than the Union of the Joint Undertaking shall appoint by common accord their representatives as well as an observer on behalf of the Governing Board.	(1) The Commission shall propose a list of candidates for Executive Director after consultation of the members other than the Union of the Joint Undertaking. For the purpose of such consultation the members other than the Union of the Joint Undertaking shall appoint by common accord their representatives as well as an observer on behalf of the Governing Board. ***The list shall ensure equal representation of and opportunities for men and women.***

Amendment 143

Proposal for a regulation

Annex – Article 10 — paragraph 2

Text proposed by the Commission	*Amendment*
(2) The Research and Innovation Advisory Group shall consist of no more than ***ten*** members, ***which*** shall be appointed by the Private Members taking into account their commitments to the Joint Undertaking.	(2) The Research and Innovation Advisory Group shall consist of no more than ***twelve*** members, ***of which no more than six*** shall be appointed by the Private Members taking into account their commitments to the Joint Undertaking ***and no more than six shall be appointed by the user forum, upon the recommendation of the Governing Board. The user forum shall establish the specific criteria and selection process for the members that it appoints.***

Amendment 144

Proposal for a regulation

Annex – Article 10 — paragraph 3

Text proposed by the Commission	*Amendment*
(3) The Infrastructure Advisory Group shall consist of ***ten*** members. The Governing Board shall establish the specific criteria that will be considered for selecting the members of the Infrastructure Advisory Group. The Chair and Vice Chair of the Governing Board shall appoint the members of the Infrastructure Advisory Group, following inputs received from the Governing Board and the Executive Director.	(3) The Infrastructure Advisory Group shall consist of ***twelve*** members. The Governing Board shall establish the specific criteria that will be considered for selecting the members of the Infrastructure Advisory Group. The Chair and Vice Chair of the Governing Board shall appoint the members of the Infrastructure Advisory Group, following inputs received from the Governing Board and the Executive Director ***and taking into account the opinion of the user forum***.

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Amendment 145

Proposal for a regulation

Annex – Article 10 — paragraph 3 a (new)

Text proposed by the Commission	*Amendment*
	(3 a) The Governing Board shall establish the specific criteria and the process for the selection of the members of the Research and Innovation Advisory Group and the Infrastructure Advisory Group.

Amendment 146

Proposal for a regulation

Annex – Article 13 — paragraph 1 — point a

Text proposed by the Commission	*Amendment*
(a) draw up and regularly update the draft multiannual strategic programme referred to in Article 19(1) of these Statutes for achieving the objectives of the Joint Undertaking set out in Article 3 of this Regulation. This draft multiannual strategic programme shall include: i) the strategic research and innovation agenda identifying the research and innovation priorities for the development and ***adoption of*** technologies and key ***competences*** for High Performance Computing and quantum computing across different application areas in order to support the development of an integrated High Performance Computing, quantum computing and data ecosystem in the Union, increase ***its*** resilience and help create new markets and societal applications, and measures to promote the development and uptake of European technology; ii) potential international cooperation activities in research and innovation that add value and are of mutual interest; iii) training and education priorities for addressing the skills gap in High Performance Computing and Quantum Computing technologies and applications, in particular for industry. ***It*** shall be reviewed regularly in accordance with the evolution of the scientific and industrial demand;	(a) draw up and regularly update the draft multiannual strategic programme referred to in Article 19(1) of these Statutes for achieving the objectives of the Joint Undertaking set out in Article 3 of this Regulation. This draft multiannual strategic programme shall include: i) the strategic research and innovation agenda***, based on the scientific and industrial demands,*** identifying the research and innovation priorities for the development and ***uptake of user*** technologies***, services, applications*** and key ***competencies*** for High Performance Computing and quantum computing across different application areas in order to support the development of an integrated High Performance Computing, quantum computing and data ecosystem in the Union, increase ***Union's*** resilience and help create new markets and societal applications, and measures to promote the development and uptake of European technology; ii) potential international cooperation activities in research and innovation that add value and are of mutual interest; iii) training and education priorities for addressing the ***competencies and*** skills gap in High Performance Computing and Quantum Computing technologies and applications, in particular for industry. ***That draft multiannual strategic programme*** shall be reviewed regularly in accordance with the evolution of the scientific and industrial demand;

Amendment 147

Proposal for a regulation

Annex – Article 13 — paragraph 1 a (new)

Text proposed by the Commission	*Amendment*
	In performing its tasks, the Research and Innovation Advisory Group shall seek the opinion of the user forum.

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Amendment 148

Proposal for a regulation

Annex – Article 14 — paragraph 1 — point a

Text proposed by the Commission	*Amendment*
(a) draw up and regularly update the draft multiannual strategic programme referred to in Article 19(1) of these Statutes for achieving the objectives of the Joint Undertaking set out in Article 3 of this Regulation. The draft multiannual strategic programme shall address: i) the acquisition of the EuroHPC supercomputers taking into account inter alia, the planning of the acquisition, the needed capacity increases, the types of applications and user communities to be addressed, the relevant user requirements and appropriate system architectures, the user requirements, and the architecture of the infrastructure; ii) the federation and interconnection of this infrastructure, taking into account inter alia, the integration with national High Performance Computing or quantum computing infrastructures, and the architecture of the hyper-connected and federated infrastructure; and iii) the capability building, including the Competence Centres and widening and training activities for end-users, as well as opportunities for promoting the take-up and use of European technology solutions notably by the Competence Centres;	(a) draw up and regularly update the draft multiannual strategic programme referred to in Article 19(1) of these Statutes for achieving the objectives of the Joint Undertaking set out in Article 3 of this Regulation. The draft multiannual strategic programme shall address: i) the acquisition of the EuroHPC supercomputers taking into account inter alia, the planning of the acquisition, the needed capacity increases, the types of applications and user communities to be addressed, the relevant user requirements and appropriate system architectures, the user requirements, and the architecture of the infrastructure; ii) the federation and interconnection of this infrastructure, taking into account inter alia, the integration with national High Performance Computing or quantum computing infrastructures, and the architecture of the hyper-connected and federated infrastructure; and iii) the capability building, including the ***Union's and the national High Performance Computing*** Competence Centres and ***the High Performance Computing Centres of Excellence*** widening and training activities for end-users, as well as opportunities for promoting the take-up and use of European technology solutions notably by the Competence Centres;

Amendment 149

Proposal for a regulation

Annex – Article 14 — paragraph 1 a (new)

Text proposed by the Commission	*Amendment*
	In performing its tasks, the Infrastructure Advisory Group shall seek the opinion of the user forum.