




Basic information	
2018/0003(NLE) NLE - Non-legislative enactments Regulation	Procedure completed
European High Performance Computing Joint Undertaking Subject 3.30.06 Information and communication technologies, digital technologies 8.40.08 Agencies and bodies of the EU	

Key players				
European Parliament	Committee responsible		Rapporteur	Appointed
	ITRE Industry, Research and Energy		BALČYTIS Zigmantas (S&D)	30/01/2018
			Shadow rapporteur BONI Michał (PPE) TOŠENOVSKÝ Evžen (ECR) FEDERLEY Fredrick (ALDE) SYLIKIOTIS Neoklis (GUE /NGL) DALUNDE Jakop G. (Verts /ALE) TAMBURRANO Dario (EFDD) KAPPEL Barbara (ENF)	
	Committee for opinion		Rapporteur for opinion	Appointed
	BUDG Budgets		The committee decided not to give an opinion.	
Council of the European Union	Council configuration		Meetings	Date
	Environment		3627	2018-06-25
European Commission	Commission DG			Commissioner
	Communications Networks, Content and Technology			GABRIEL Mariya

Key events			
Date	Event	Reference	Summary
11/01/2018	Legislative proposal published	COM(2018)0008 	Summary
28/02/2018	Committee referral announced in Parliament		
19/06/2018	Vote in committee		
25/06/2018	Committee report tabled for plenary, 1st reading/single reading	A8-0217/2018	Summary
03/07/2018	Decision by Parliament	T8-0271/2018	Summary
03/07/2018	Results of vote in Parliament		
28/09/2018	Act adopted by Council after consultation of Parliament		
28/09/2018	End of procedure in Parliament		
08/10/2018	Final act published in Official Journal		

Technical information	
Procedure reference	2018/0003(NLE)
Procedure type	NLE - Non-legislative enactments
Procedure subtype	Consultation of Parliament
Legislative instrument	Regulation
Legal basis	Treaty on the Functioning of the European Union TFEU 187 Treaty on the Functioning of the European Union TFEU 188 -a1
Other legal basis	Rules of Procedure EP 165
Stage reached in procedure	Procedure completed
Committee dossier	ITRE/8/12062

Documentation gateway				
European Parliament				
Document type	Committee	Reference	Date	Summary
Committee draft report		PE619.403	28/03/2018	
Amendments tabled in committee		PE621.974	03/05/2018	
Committee report tabled for plenary, 1st reading/single reading		A8-0217/2018	25/06/2018	Summary
Text adopted by Parliament, 1st reading/single reading		T8-0271/2018	03/07/2018	Summary
European Commission				
Document type	Reference	Date	Summary	
Legislative proposal	COM(2018)0008 	11/01/2018	Summary	

Document attached to the procedure	SWD(2018)0005 	11/01/2018	
Document attached to the procedure	SWD(2018)0006	11/01/2018	
Commission response to text adopted in plenary	SP(2018)547	12/09/2018	

National parliaments

Document type	Parliament /Chamber	Reference	Date	Summary
Contribution	CZ_SENATE	COM(2018)0008	12/04/2018	
Contribution	FR_SENATE	COM(2018)0008	29/06/2018	

Additional information

Source	Document	Date
EP Research Service	Briefing	
European Commission	EUR-Lex	

Final act

Regulation 2018/1488
OJ L 252 08.10.2018, p. 0001

European High Performance Computing Joint Undertaking

2018/0003(NLE) - 03/07/2018 - Text adopted by Parliament, 1st reading/single reading

The European Parliament adopted, by 599 votes to 37, with 39 abstentions, a legislative resolution on the proposal for a Council regulation on establishing the European High Performance Computing Joint Undertaking.

Parliament approved the Commission proposal subject to amendments.

Mission: Members stressed the importance of the EU being among the **world's leading supercomputing powers by 2022**. The mission of the Joint Undertaking is to establish and maintain in the Union an integrated world-class High Performance Computing and Big Data ecosystem based on Union leadership in HPC, cloud and Big Data technologies.

Definitions: the amended text stipulates that 'hosting entity' shall mean a legal entity established in a Member State participating in the Joint Undertaking which includes facilities to host and operate a **petascale** (10^{15} calculations per second) or **pre-exascale** (10^{17} calculations per second) supercomputer.

Objectives: the Joint Undertaking shall have, *inter alia*, the following overall objectives:

- to provide scientists and researchers, industry, including **start-ups, micro-enterprises, SMEs** and the public sector from the Union or an Associated Country to Horizon 2020 with latest High Performance Computing and Data Infrastructure and support the development of its technologies and its applications across a wide range of fields **primarily for civilian use such as healthcare, energy, smart cities, autonomous transport and space**;
- to provide a framework for acquisition of an integrated world-class pre-exascale supercomputing and data infrastructure in the Union, including through supporting the **acquisition of petascale supercomputers**;
- to support the development of an integrated High Performance Computing ecosystem in the Union covering all scientific and industrial value chain segments notably hardware, software, applications, services, engineering, interconnections, know-how and skills, in order to **strengthen the Union as a global centre for innovation**, contributing to competitiveness and enhanced research and development capacity;

- to enable **synergies** and provide added value of cooperation between participating Member States and other actors;
- to liaise with existing contractual public-private partnerships with regard to High Performance Computing and big data in order to create synergies and integration;
- to increase the innovation potential of industry, and in particular of **microenterprises and SMEs, as well as of research and scientific communities** using advanced High Performance Computing infrastructures and services, including national High Performance Computing and Supercomputing centres;
- to encourage qualification and a balanced representation of men and women in the High Performance Computing career paths;

Hosting entity: the Joint Undertaking shall entrust the operation of each individual petascale or pre-exascale supercomputer it owns to a hosting entity, representing **one or several Participating Countries**. The hosting entity shall be selected by the Governing Board, based on, **inter alia**, a high level of data protection, privacy and cybersecurity, including a state-of-the-art management of risks and threats and resilience against cyberattacks. Once the hosting entities are selected, the Joint Undertaking shall ensure **synergies** with the European structural and investment funds.

Access time to the supercomputers: access to the share of the Union's time shall have an exclusive focus on **civil applications**. The contribution from each Participating State to the cost of the access time shall be made publicly available.

Research and Innovation Advisory Group: this group shall consist of no more than **20 members** (as opposed to 12 as proposed by the Commission), whereof no more than eight shall be appointed by the Private Members and no more than twelve shall be appointed by the Governing Board.

Data protection: the Union law on data protection, privacy and security shall apply to any supercomputer owned fully or in part by the Joint Undertaking, or for any supercomputer making available access time to the Joint Undertaking. The JU shall guarantee that the High Performance Computing supercomputers in the Union are accessible exclusively to entities which comply with Union law on data protection, privacy and security.

Evaluation: Members stressed that the evaluation, to be carried out by 30 June 2022, shall also identify possible other policy needs, including assessment of the situation for specific sectors on their possibility to fully access and use the possibilities enabled by High Performance Computing.

European High Performance Computing Joint Undertaking

2018/0003(NLE) - 11/01/2018 - Legislative proposal

PURPOSE: to establish a European Joint Undertaking for High Performance Computing (EuroHPC) during the period 2019-2026.

PROPOSED ACT: Council Regulation.

ROLE OF THE EUROPEAN PARLIAMENT: the Council adopts the act after consulting the European Parliament but without being obliged to follow the opinion of the European Parliament.

BACKGROUND: **High performance computing (HPC)** is an indispensable tool for addressing major scientific and societal challenges such as early detection of diseases, forecasting climate change or the prevention of natural disasters. It has an increasingly important impact on industries and businesses as it reduces design and production cycles. Lastly, it is essential for national security and defence.

At present, the **supercomputers available in the Union do not satisfy demand**. European scientists and industry are increasingly processing their data outside the EU. This lack of independence can create problems, especially with regard to the protection of personal data and the ownership of data, in particular for sensitive applications such as health.

Since 2012, the Commission has been promoting EU initiatives in this area:

- on 19 April 2016, the Commission adopted the European Cloud Initiative, as part of its [Digitising European Industry strategy](#). This involves the Commission and the Member States creating a leading European HPC and big data ecosystem, underpinned by a world-class HPC, data and network infrastructure;
- on 23 March 2017, at the Digital Day in Rome, seven Member States (France, Germany, Italy, Luxembourg, the Netherlands, Portugal and Spain) signed the EuroHPC declaration. They were subsequently joined by Belgium, Slovenia, Bulgaria, Switzerland, Greece and Croatia. These 13 countries agreed to work together and with the Commission to acquire and deploy, by 2022/2023, a pan-European integrated exascale supercomputing infrastructure (EuroHPC) (i.e. at least 10 to the power of 18 or 1 billion calculations per second), which is expected to be reached around 2021-2022.

The EuroHPC initiative will **enable Member States to coordinate together with the Commission their HPC investments and strategies**. The end goal is to establish in the EU a world-class HPC and data infrastructure that Member States on their own cannot afford.

IMPACT ASSESSMENT: the chosen option is that of the **creation of a Joint Undertaking** providing a legal, contractual and organisational common framework to structure the joint commitments entered into by its participating members. It also provides its members with a firm governance structure and budgetary certainty. It can:

- implement joint procurement and operate world-class HPC systems via the promotion of (in particular European) technology;
- as the owner of the pre-exascale supercomputers funded jointly by its members and so facilitate non-discriminatory access to them;
- launch R&D&I programmes for developing technologies and their subsequent integration in European exascale supercomputing systems.

CONTENT: the proposed Regulation aims to establish a '**European Joint Undertaking for High Performance Computing**' for a period until 31 December 2026.

The key objective is to provide European scientists, businesses and the public sector with the latest data and HPC infrastructures and to support the development of its technologies and its applications across a wide range of fields. The following activities are provided to this effect:

- **provide a framework for acquisition of an integrated world-class pre-exascale supercomputing and data infrastructure in the Union:** in 2019-2020, the Joint Undertaking will procure two world-class pre-exascale machines of a few hundred petaflops and co-finance the acquisition of at least two additional machines of the order of a few tens of petaflops; it will manage access to these supercomputers for a wide range of public and private users starting in 2020;
- **support the research and development of an integrated High Performance Computing ecosystem** in the Union covering all scientific and industrial value chain segments notably hardware, software, applications, services, engineering, interconnections, know-how and skills.

Governance of the Joint Undertaking: the Joint Undertaking governance shall 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. It should be responsible for strategic policy making and funding decisions related to the activities of the Joint Undertaking, in particular for all the public procurement activities. The Industrial and Scientific Advisory Board should include representatives of academia and industry as users and technology suppliers.

Financing: the Union's financial contribution to the Joint Undertaking would be up to a maximum of **EUR 486 million under the current multiannual financial framework**, broken down as follows: (i) EUR 386 million from the [Horizon 2020 programme](#); (ii) EUR 100 million from the [Connecting Europe Facility](#) (CEF). This contribution shall be matched by Participating States and the Private Members of the EuroHPC Joint Undertaking.

European High Performance Computing Joint Undertaking

2018/0003(NLE) - 25/06/2018 - Committee report tabled for plenary, 1st reading/single reading

The Committee on Industry, Research and Energy adopted the report by Zigmantas BALČYTIS (S&D, LT) on the proposal for a Council regulation on establishing the European High Performance Computing Joint Undertaking.

The committee recommended that Parliament approve the Commission proposal as amended.

Definitions: the amended text stipulates that 'hosting entity' shall mean a legal entity established in a Member State participating in the Joint Undertaking which includes facilities to host and operate a **petascale** (10^{15} calculations per second) or pre-exascale (10^{17} calculations per second) supercomputer.

Objectives: the Joint Undertaking shall have, *inter alia*, the following overall objectives:

- to provide scientists and researchers, industry, including **start-ups, micro-enterprises, SMEs** and the public sector from the Union or an Associated Country to Horizon 2020 with latest High Performance Computing and Data Infrastructure and support the development of its technologies and its applications across a wide range of fields **primarily for civilian use such as healthcare, energy, smart cities, autonomous transport and space**;
- to provide a framework for acquisition of an integrated world-class pre-exascale supercomputing and data infrastructure in the Union, including through supporting the **acquisition of petascale supercomputers**;
- to support the development of an integrated High Performance Computing ecosystem in the Union covering all scientific and industrial value chain segments notably hardware, software, applications, services, engineering, interconnections, know-how and skills, in order to **strengthen the Union as a global centre for innovation**, contributing to competitiveness and enhanced research and development capacity;
- to enable **synergies** and provide added value of cooperation between participating Member States and other actors;
- to liaise with existing contractual public-private partnerships with regard to High Performance Computing and big data in order to create synergies and integration;
- to increase the innovation potential of industry, and in particular of **microenterprises and SMEs, as well as of research and scientific communities** using advanced High Performance Computing infrastructures and services, including national High Performance Computing and Supercomputing centres;
- to encourage qualification and a balanced representation of men and women in the High Performance Computing career paths;

Hosting entity: the Joint Undertaking shall entrust the operation of each individual petascale or pre-exascale supercomputer it owns to a hosting entity, representing **one or several Participating Countries**. The hosting entity shall be selected by the Governing Board, based on, *inter alia*, a high level of data protection, privacy and cybersecurity, including a state-of-the-art management of risks and threats and resilience against cyberattacks. Once the hosting entities are selected, the Joint Undertaking shall ensure **synergies** with the European structural and investment funds.

Access time to the supercomputers: access to the share of the Union's time shall have an exclusive focus on **civil applications**. The contribution from each Participating State to the cost of the access time shall be made publicly available.

Research and Innovation Advisory Group: this group shall consist of no more than **20 members (as opposed to 12 as proposed by the Commission)**, whereof no more than **eight** shall be appointed by the Private Members and no more than twelve shall be appointed by the Governing Board.

Evaluation: Members stressed that the evaluation, to be carried out by 30 June 2022, shall also identify possible other policy needs, including assessment of the situation for specific sectors on their possibility to fully access and use the possibilities enabled by High Performance Computing.

Data protection: the Union law on data protection, privacy and security shall apply to any supercomputer owned fully or in part by the Joint Undertaking, or for any supercomputer making available access time to the Joint Undertaking. The JU shall guarantee that the High Performance Computing supercomputers in the Union are accessible exclusively to entities which comply with Union law on data protection, privacy and security.