



# The European roadmap to exascale “Co-designing with the European Processor Initiative”

*EuroHPC Summit Week – Poznan – 15 May 2019*

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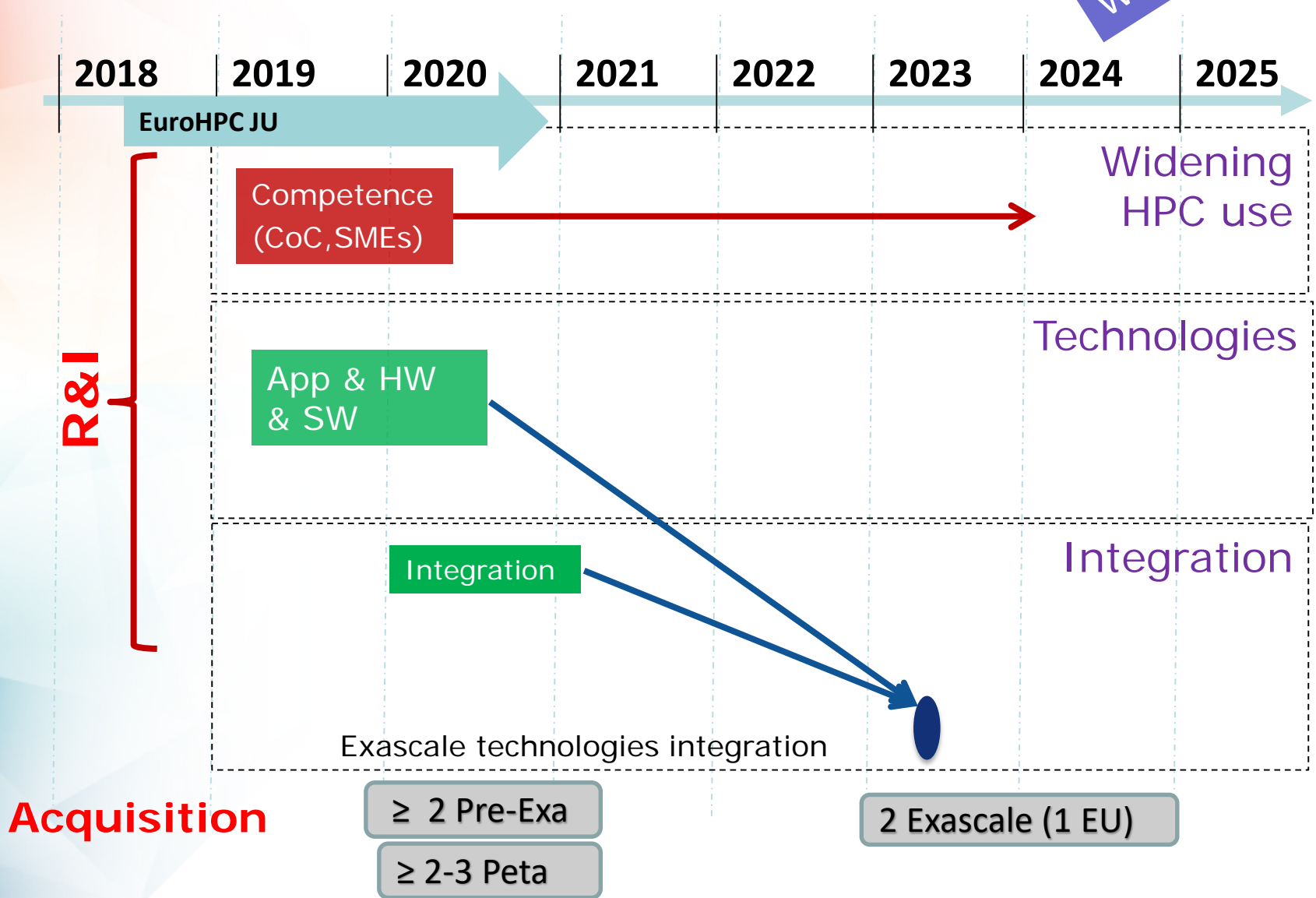
HPC and Quantum technologies unit

Digital Excellence & Science Infrastructure - DG CONNECT

European Commission

# EuroHPC towards exascale

Work in progress



2018

2019

2020

2021

2022

2023

2024

2025

EuroHPC JU

Competence  
(CoC, SMEs)

Widening  
HPC use

R&I

App & HW  
& SW

Technologies

Integration

Integration

Exascale technologies integration

Acquisition

≥ 2 Pre-Exa

≥ 2-3 Peta

2 Exascale (1 EU)

# Building a competitive Ecosystem

## R&I Calls 2019-2020

**Work in progress**

	<b>&gt; 250 M€</b>		<b>&gt; 380 M€</b>	
	<b>2018</b> H2020 & CEF Calls	<b>2019</b> JU Calls	<b>2020</b> JU Calls	
<b>HPC Technologies</b> (HW, SW, Applications)	EPI Phase 1 (80 M€, H2020)	Extreme scale technologies > 100 M€	EPI Phase 2	
	HPC - BD testbeds (90 M€, H2020)		SW codes and HPC-BD testbeds	Pilots towards Exascale
	CoE (72 M€, H2020)		CoE (20 M€, H2020)	INCO (0.5 M€, H2020)
<b>Widening the HPC use + HPC Skills</b>	Public Open Data (15 M€, CEF)	HPC Competence Centres, ~58M€		
		Support to SMEs 10 M€		

# Co-designing with the European Processor Initiative mini-symposium

- Co-design with applications is a critical activity in the development of the exascale technology
- The European Processor Initiative (EPI) is leading the European effort to develop a competitive solution for the next generation of computing - key components for building Exascale supercomputers based on European HW and SW technologies
- Integration of EPI technologies in pilots – how to collaborate in the co-design effort towards European Exascale supercomputers based on EPI technologies?

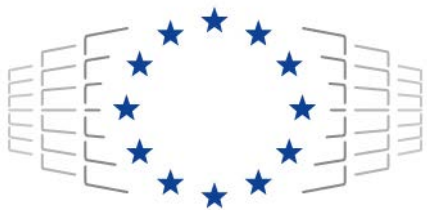
## **Objectives:**

- Co-design for EPI and pilot system ideas leading to supercomputers based on EPI technologies
- Component-level vs. system-level co-design
- Applications for system co-design for EPI and the pilot system projects
- Bring application and technology/system architecture experts together
- Current status of the software landscape, contribution to a coherent effort towards the European exascale supercomputers

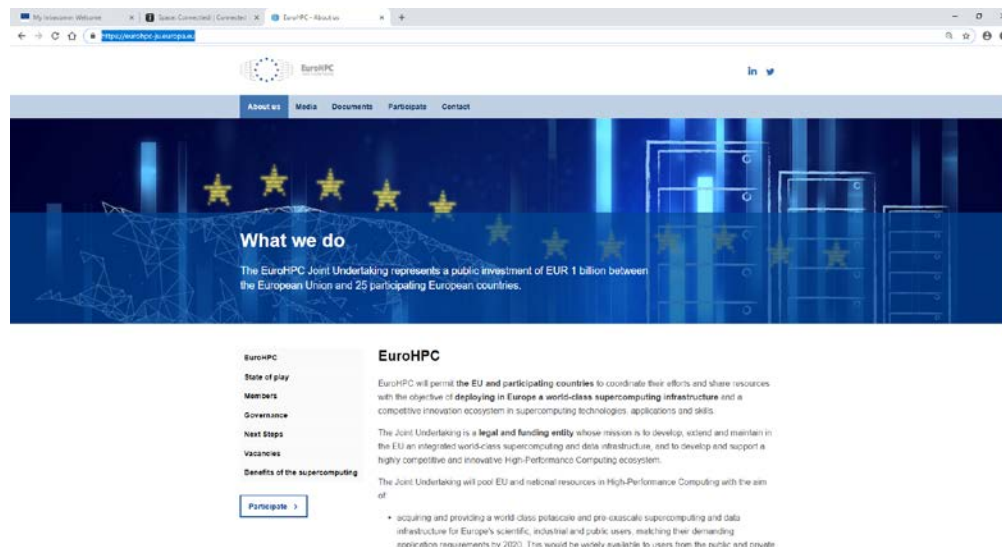
# The EuroHPC JU

## Thank you!

Visit the EuroHPC JU website at: <https://eurohpc-ju.europa.eu/>



**EuroHPC**  
Joint Undertaking



The screenshot shows the EuroHPC website homepage. The header includes the EuroHPC logo and navigation links: About us, Media, Documents, Participate, and Contact. The main content area features a large blue graphic with the text "What we do" and a sub-headline: "The EuroHPC Joint Undertaking represents a public investment of EUR 1 billion between the European Union and 25 participating European countries." Below this, there is a sidebar with a "Participate" button and a main content area with the heading "EuroHPC" and a detailed description of the project's goals and objectives.

**EuroHPC**  
State of play  
Members  
Governance  
Next steps  
Vacancies  
Benefits of the supercomputing

[Participate >](#)

**EuroHPC**  
EuroHPC will permit the EU and participating countries to coordinate their efforts and share resources with the objective of deploying in Europe a world-class supercomputing infrastructure and a competitive innovation ecosystem in supercomputing technologies, applications and skills.  
The Joint Undertaking is a legal and funding entity whose mission is to develop, extend and maintain in the EU an integrated world-class supercomputing and data infrastructure, and to develop and support a highly competitive and innovative High-Performance Computing ecosystem.  
The Joint Undertaking will pool EU and national resources in High-Performance Computing with the aim of:  
• acquiring and providing a world class petascale and pre-exascale supercomputing and data infrastructure for Europe's scientific, industrial and public users, matching their demanding application requirements by 2020. This would be widely available to users from the public and private