

NEXT STEP EU



JEAN-YVES BERTHOU, INRIA
INPEX 2026, NITERIO, 22-25 APRIL

CSA SPE-EU

HORIZON-CL4-2025-03-DIGITAL-EMERGING-04: Post-exascale HPC (CSA)

Expected Outcome:

- Delivery of a high-quality **roadmap** addressing the post-exascale HPC/AI research challenges for applications, algorithms, software, hardware and systems, including a strong emphasis on AI
- Contribution to the development of a competitive European converged HPC/Quantum/AI **ecosystem**, including AI Factories and future AI Gigafactories
- Interaction and collaboration with similar **international** efforts, ensuring alignment with AI-driven computing paradigms worldwide

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Scope:

- Guide and prepare European HPC for the post-exascale era of converging supercomputing, quantum computing and artificial intelligence worlds.
- Bring together the key scientific and industrial players in Europe, and should liaise with the relevant international post-exascale efforts (e.g. the International Exascale Project (**InPEX**), the EuroHPC Joint Undertaking advisory bodies (**RIAG, INFRAG**), the EuroHPC JU private partners (i.e. **ETP4HPC, BDVA, QuIC**) relevant EuroHPC main initiatives (e.g. the **DARE** Framework Programme Agreement on RISC-V processors, HPC Centres of Excellence, AI Factories, etc), the hosting entities of European **AI Factories** and **future AI Gigafactories**, and other relevant European projects and initiatives.
- The action should analyse the research challenges of all relevant technologies in the post-exascale/AI era and produce and maintain a high-quality research roadmap with recommendations for research actions at the European level.
- Issues like hardware-supported mixed-precision, AI-driven HPC as a service, real-time HPC, next generation AI model training and inference, digital continuum, convergence of HPC/AI/Quantum/Cloud/Edge, should be part of the analysis.

DG CNECT Expectations

Next Framework Program 2028-2034, 7 years

- budget of few Billions euros for converge HPC, IA, Quantum, Cloud
- Need a vision and an implementation strategy for software and hardware

Key points:

- Not classical thinking
- Flexibility and reactivity → small, practical and usable documents (policy paper) as well as a reference doc
- Out of the box (not classical wording)
- Efficiency of the process => time to grant
- Identify disruption, game changers

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DG CNECT Expectations

Timing:

- Call in June, submission in October, accepted February 2026
- Start April 2026, 1st
- 36 months

Expected contribution:

- Must include financial funding modalities of programs and calls
- First CSA deliverable: spring 2026, short perspective document with regular updates
- Final deliverable: vision, why, strategy, roadmap, actionable

Organization

Coordinator: Inria, Jean-Yves Berthou

- **WP1:** European post Exascale vision and roadmap Development, ET4HPC, Sai Narasimhamurthy
- **WP2:** European Community Federation, BDVA, Gabriel Castane
- **WP3:** International Collaborations, FZJ, Bernd Mohr
- **WP4:** Management and coordination, Inria, Raymond Namyst

No.	Participant organisation name	Short name	Type
1	INSTITUT NATIONAL DE RECHERCHE EN INFORMATIQUE ET AUTOMATIQUE	INRIA (Coordinator)	RO ¹
2	UNIVERSITE DE BORDEAUX	UBx (AE ²)	RO
3	GRAND EQUIPEMENT NATIONAL DE CALCUL INTENSIF	GENCI (AE)	Non-profit
4	DATA AI AND ROBOTICS DAIRO	BDVA	Non-profit
5	BARCELONA SUPERCOMPUTING CENTER CENTRO NACIONAL DE SUPERCOMPUTACION	BSC CNS	RO
6	COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	CEA	RO
7	ORGANISATION EUROPEENNE POUR LA RECHERCHE NUCLEAIRE	CERN	RO
8	CSC-IT CENTER FOR SCIENCE LTD	CSC	Non-profit
9	EUROPEAN TECHNOLOGY PLATFORM FOR HIGH PERFORMANCE COMPUTING	ETP4HPC	Non-profit
10	FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG EV	Fraunhofer (AE)	RO
11	PARTEC	PARTEC (AE)	SME
12	SIPEARL	SiPEARL (AE)	SME
13	FORSCHUNGSZENTRUM JULICH GMBH	FZJ	RO
14	NATIONAL INFRASTRUCTURES FOR RESEARCH AND TECHNOLOGY	GRNET	Non-profit
15	CENTRO NAZIONALE DI RICERCA IN HIGH PERFORMANCE COMPUTING, BIG DATA E QUANTUM COMPUTING	ICSC	RO
16	CINECA CONSORZIO INTERUNIVERSITARIO	CINECA (AE)	RO
17	ISTITUTO NAZIONALE DI FISICA NUCLEARE	INFN (AE)	RO
18	UNIVERSITA DEGLI STUDI DI TORINO	UNITO (AE)	RO
19	NEOVIA INNOVATION	NEOVIA	SME
20	INSTYTUT CHEMII BIOORGANICZNEJ POLSKIEJ AKADEMII NAUK	PCSS	RO
21	EUROPEAN QUANTUM INDUSTRY CONSORTIUM EV	QuIC	Non-profit
22	TECHNISCHE UNIVERSITAET MUENCHEN	TUM	RO
23	THE UNIVERSITY OF EDINBURGH	UEDIN	RO

