Research and Innovation

Opportunities for SMEs
Funding for Research & Innovation
Co-funded by EuroHPC, Participating States and in-kind contributions

Digital Europe
1.98 B€
- Infrastructure
- Federation of HPC services
- Widening usage and skills

Horizon Europe
900 M€
- Technology
- Applications
- International cooperation

Connecting Europe Facility
200 M€
- Hyperconnectivity
- Data connectivity

Total budget
1.5 B€ in 2019-2020
7 B€ in 2021-2027

R&I and skills
350 M€ in 2019-2020
≈ 2 B€ in 2021-2027

900 M€ in-kind contributions from Private Members

3 B€ from Participating States
Financial Instruments

- **Grants**
  - Calls for Proposals
  - Synergy grants

- **Procurements**
  - Calls for Tender
  - Co-financing through ESIF, RRF

- **Equity & debt financing**
  - Not provided by the JU but could be used in combination with grants and procurements
  - The European Innovation Council offers equity, also blended with grants (SMEs)
  - The European Investment Bank offers loans
The HPC value chain

“Financing the future of supercomputing” EIB Advisory Services, 2018
**R&I actions in numbers**

**Grant Budget**
- Large (>10M€), 60%
- Medium (5-10M€), 34%
- Small (<5M€), 6%

**No of Grants**
- Large (>10M€), 18%
- Medium (5-10M€), 58%
- Small (<5M€), 25%

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**EuroHPC JU pools European resources to fund large strategic projects**
- HPC hardware including advanced processors, accelerators, high-speed interconnect
- Software stack including programming models, resource management software, HPC services
- Applications for R&I covering many scientific domains and topics, engineering
- Skills, usage and HPC adoption supported by a pan-European network of Competence Centres
Industrial R&I funded by EuroHPC JU

Industrial software, HPC applications and workflows

**Objective:** Implement a computer-aided drug design solution for automated drug discovery

**Budget:** €5,938,656.25

**Industrial partners:**
- DOMPE FARMACEUTICI SPA (IT)
- E4 COMPUTER ENGINEERING SPA (IT)
- tofmotion GmbH (AT)

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**Objective:** development of CODA - the new reference flow solver for aerodynamic applications inside AIRBUS group

**Budget:** €3,998,703.75

**Industrial partners:**
- AIRBUS OPERATIONS SAS (FR)
- OFFICE NATIONAL D’ETUDES ET DE RECHERCHES AEROSPATIALES (FR)
- DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV (DE)

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**Objective:** Workflows and applications for aeronautics, climate and weather, and energy domains

**Budget:** €8,815,845.00

**Industrial partners:**
- BULL SAS (FR)
- NEUROPUBLIC AE PLIROFORIKIS & EPIKOINONION (EL)
- GE AVIO SRL (IT)

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**Objective:** Improvement of the OpenFOAM software for computational fluid dynamics across the entire processing chain

**Budget:** €5,425,618.75

**Industrial partners:**
- ESI GROUP (FR)
- E4 COMPUTER ENGINEERING SPA (IT)
- UPSTREAM CFD GMBH
Skills and Usage

Expertise and HPC resources
- European network of NCCs in 32 countries to widen the use of HPC in Europe.
- Support SMEs, public services and private businesses
- Gateway for users to access European HPC resources

Financial support for HPC uptake
- Boost innovation and business opportunities for SMEs
- Solve business problems with HPC, financial support and expertise from European HPC leaders

Talent development
- Train the next generation of HPC experts in Europe
- 1st pan-European MSc Programme in HPC including 19 countries
- Connect academic education with HPC industry

„It is our proposed level of ambition that by 2030:
• 75% of European enterprises have taken up cloud computing services, big data and Artificial Intelligence
• More than 90% of European SMEs reach at least a basic level of digital intensity“
National Competence Centres for HPC

- **EuroCC**
  A European network of more than 30 national HPC Competence Centres to widen the use of HPC in Europe
  - Provide training and specific local support to access to HPC resources, expertise and funding free of charge
  - Serve as single point of access to a European network of HPC experts for users from academia, industry, public administrations and in particular SMEs
  - Support HPC uptake by businesses and implementation of best practice
  - Ensuring a coordinated and consistent high level of expertise across Europe in HPC and related disciplines e.g. data analytics (HPDA) and artificial intelligence
  - Mapping competencies and identifying knowledge gaps
Stimulating the innovation potential of SMEs

https://www.ff4eurohpc.eu/

- Financial support for SMEs to
  - Boost innovation potential and competitiveness through HPC
  - Address business challenges with HPC
  - Adopt HPC in existing business models
  - Develop skills in related disciplines on the basis of HPC, such as high performance data analytics (HPDA) and artificial intelligence to solve specific business problems

- Grant of 50,000 – 150,000 € per beneficiary
- Support by experts from leading European HPC centres
Proposal evaluation

Time-to-Grant (TTG) - 8 months max

Time-to-Inform (TTI) - 5 months max

Time-to-Sign (TTS) - TTG minus TTI

Call deadline

Evaluation report ready

Info to beneficiaries: ESR (+ Invitation)

Grant signature

Grant preparation:
- Interaction with beneficiaries
- Drafting of GAP report
- Internal approval

Evaluation

Preparatory work

Award decision

Budgetary commitment

Grant signature

Pre-financing

Accession forms

Accession forms

5 months max

TTG minus TTI