ETP4HPC: HPC InfoDay Paris, 9th April

HPC in eInfrastructure
H2020: WP 2014-15

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HPC related Calls

	2014 EUR million	2015 EUR million	Call Deadline
EINFRA-4-2014 - Pan-European HPC infrastructure and services	**15**		**02/09/2014 - 17:00 Brussels time**
EINFRA-5-2015 - Centres of Excellence (CoE) for computing applications		***40 (tbc)***	**2015 *(14/01/2015 tbc)***
EINFRA-6-2014 - Network of HPC Competence Centres for SMEs	**2**		**02/09/2014 - 17:00 Brussels time**
FETHPC1-2014 HPC Core Technologies, Programming Environments and Algorithms for Extreme Parallelism and Extreme Data Applications	**93,4**		**25/11/2014 at 17.00.00 Brussels time**
FETHPC 2 - 2014: HPC Ecosystem Development	**4**		**25/11/2014 at 17.00.00 Brussels time**

HPC in e-Infrastructure

EINFRA-4-2014 - Pan-European HPC infrastructure and services

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PAN-EUROPEAN
HIGH PERFORMANCE COMPUTING
INFRASTRUCTURE AND SERVICES

Specific Challenge:

Create a world-class pan-European infrastructure, and provide state-of-the-art services to users, independently of location by

- Pooling, integrating and rationalising HPC resources in Europe
- Contribute to the implementation of the EU strategy on HPC:

Expected Impact:

1. Improved services and procedures (inc. openness)
2. Increased amount of computing cycles available to researchers
3. Increased number of industrial organisations (in particular SMEs), including training in HPC
4. Increased investment in HPC infrastructure in Europe (national, regional and EU)
5. Long term financial sustainability (business model/governance)
6. Linking demand and supply in the European HPC ecosystem

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PAN-EUROPEAN
HIGH PERFORMANCE COMPUTING
INFRASTRUCTURE AND SERVICES

Scope:

1. Provision of seamless and efficient Tier-0 services adapted to the needs of different user classes *(Tier-0 definition)*
2. Activities that build on national Tier-1 capabilities (training, service prototyping, software development etc.)
3. openness to new user communities and new applications, and Industrial take-up of HPC services in particular by SMEs
4. Governance, business models and long term financial sustainability
5. Strategy for deployment of world-class HPC environment
6. Work in synergy with:
    1. **Centres of Excellence**
    2. **European Technology Platform for HPC by providing specs for future exascale prototypes and systems**
7. Training and skills development
8. Develop an international cooperation policy and associated activities.

Coordinate with other e-infrastructure providers for interoperability and seamless user experience / core-basic services

Pan European high Performance computing infrastructures and services

Conditions

- **Type of Action: Research and Innovation**
- **Call: Call 3**
- **Deadline for the submission of proposals: 02/09/2014**
- **Overall budget: 15M€**
- **Proposals: Expected to fund one project**

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E-INFRA-5-2015: Centres of Excellence for computing applications

HPC Centres of Excellence (HPC CoE)

Specific challenge:

- **Establish a limited number of user-centred Centres of Excellence (CoE) in the application of HPC for addressing scientific, industrial or societal challenges**
  - **CoEs may be**
    - **'thematic':**
      - **addressing specific application domains such as medicine, life science or energy**
    - **'transversal':**
      - **on computational science (e.g. algorithms, analytics, numerical methods etc.)**
    - **'challenge-driven':**
      - **addressing societal or industrial challenges (e.g. ageing, climate change, clean transport etc.); or a combination of these types.**

Scope: The CoE's are expected to be:

- **User-driven**, with the application users and owners playing a decisive role in governance
- **Integrated**: encompassing not only HPC software but also relevant aspects of hardware, data management/storage, connectivity, security, etc.
- **Multidisciplinary**: with domain expertise co-located alongside HPC system, software and algorithm expertise
- **Distributed** with a possible central hub, federating capabilities around Europe, exploiting available competences, and ensuring synergies with national/local programmes

Proposals for CoEs will address:

- **Provision of pan-European services such as:**
  - **consultancy to industry and SMEs**
  - **developing, optimising and scaling HPC application codes towards peta and exascale computing;**
  - **testing, validating and maintaining codes and managing the associated data;**
  - **quality assurance;**
  - **co-design of hardware, software and codes**
  - **research in HPC applications**
  - **addressing the skills gap in computational science.**

Proposals for CoEs will address: (cont'd)

- **Synergy with exascale R&D through co-design**
- **Sustainability: Clear business plans**
- **Creating communities:**
  around specific codes that impact the target sectors, involving ISVs, and exchange of best practices in particular for SMEs
- **A governance structure driven by the needs of the users**
  -Commercial management expertise

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Proposals for CoEs : (general points)

- **8-10 CoEs are expected to be funded**
  - **Follow up Call is expected in the future**
- **International co-operation:**
  - **encouraged where there are clear mutual benefits and the partners have the relevant HPC capacity**
- **EU contribution per proposal**
  - **4 to 5 M€ approximately**

Example application/thematic areas (not limited to):

- **Medicine & life sciences;**
- **Biology, genomics and drug discovery**
- **Weather, climate & solid earth sciences;**
- **Industrial applications & engineering;**
- **Materials science, chemistry and nanoscience;**
- **Astrophysics, high-energy physics and plasma physics.**

Other examples might be oriented around societal/industrial challenges, such as `**personalised health/medicine'**, **`cleaner production', 'safer car', 'smart cities' etc.,**

or around industry sectors like **pharma, automotive, oil and gas etc.**

Expected Impacts

- Improved **access** to computing applications and expertise
- Improved **competitiveness** for companies and SMEs
- European **leadership** in applications that address societal challenges and/or industrial applications
- More scientists and engineers **trained**

Conditions

- **Type of action: Research and Innovation**
- **Call: Call 3**
- **Deadline for the submission of proposals: 14/01/2015 (tbc)**
- **Overall budget: 40M€**
- **Indicative budget per proposal: 4 to 5 M€**

HPC in e-Infrastructure

E-INFRA-6-2014: Network of HPC Competence Centres for SMEs

Network of HPC Competence Centres for SMEs

Specific challenge:

- **Foster the use of HPC by SMEs**
  - **Competence centres set up in some Member States -no wide coverage of Europe**

Network of HPC Competence Centres for SMEs

Scope

The proposal should address:

- **Networking**
- **Awareness raising**
- **Identification of the pool of SMEs and available expertise**
- **Training**

Network of HPC Competence Centres for SMEs

Scope

The aim – to support one network which will address:

- **coordination, outreach, training and exchange of best practice and software components**
- **complementing their current activities and services with actions of a European added-value**

Network of HPC Competence Centres for SMEs

Scope

Not expected: Direct support to adoption of HPC by individual SMEs

Action is complementary to: ICT Work Programme 2014-2015: (Factories of the Future - FoF) ICT Innovation for Manufacturing SMEs (I4MS)

Network of HPC Competence Centres for SMEs

Expected Impact:

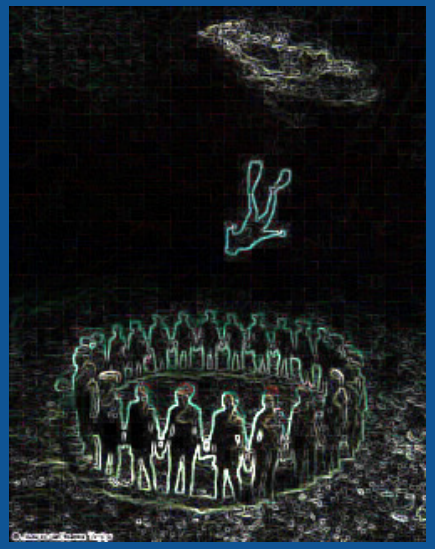
- **The Network of HPC Competence Centres - a reference for best practices**
- **Increase number of SMEs - users of HPC**
- **Establish a focal point at European level for expertise in HPC use by SMEs**
- **Increase the size of the HPC market (services, ISVs, computers)**

Network of HPC Competence Centres for SMEs

Conditions : EINFRA-6-2014 : Network of HPC Competence Centres for SMEs

- **Type of action: Coordination and support action**
- **Deadline**
  02/09/2014 – 17.00 Brussels time
- **Budget: 2M€**
- **Expect to fund One Network**

THANK YOU



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