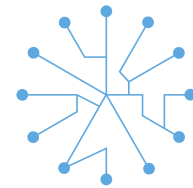# EuroLab-4-HPC
Foundations of a European Research Center of Excellence in HPC Systems

Coordinator: **Per Stenström**

Chalmers University of Technology

Sweden

www.eurolab4hpc.eu

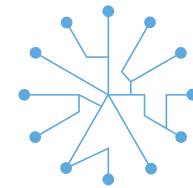# Mission: EuroLab-4-HPC will join HPC Systems Research in Europe

Gap:

- **ETP4HPC** and **Prace** have joined user and provider HPC stakeholders
- **HiPEAC** has joined advanced, high-performance computing researchers

EuroLab-4-HPC: Join HiPEAC with HPC stakeholders

Mission:

- **Join** systems research and other stakeholders around a common long-term research agenda
- **Train** future technology leaders
- **Accelerate** innovation

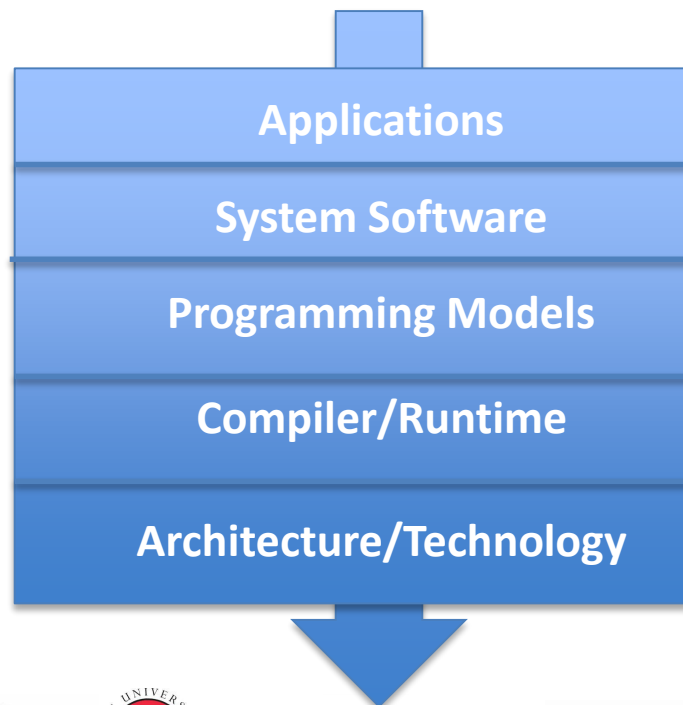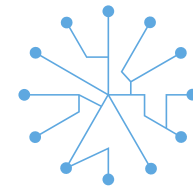*Vision: Making Europe a Leader in HPC Technology*

Objectives

To

- **join HPC system research groups** around a long-term (7-15 years) HPC research agenda by forming an HPC research roadmap and joining forces behind it
- **define an HPC curriculum** in HPC technologies and best-practice education/training methods to foster future European technology leaders
- **accelerate commercial uptake** of HPC technologies
- **build links** between the HPC research community and other stakeholders (suppliers, venture capital, etc)
- **form a vision** for a future Centre of Excellence on HPC systems

A Long-term HPC Systems Research Agenda

- **Moore's Law is running out of steam**
- **Beyond Exascale computing systems**
- **Disruptive technologies across the stack**
- **7-15 years**

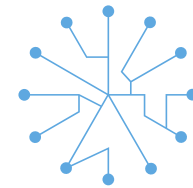| Applications |
| --- |
| System Software |
| Programming Models |
| Compiler/Runtime |
| Architecture/Technology |

Cross-cutting issues:
Performance, energy, dependability, programmability, scalability etc

Linking the Communities

- Common research platforms as a vehicle to join forces around common research goals

- **Instrument: Cross-site visit program**
  - EuroLab-4-HPC launched a call 2015
  - About ten cross-site visit projects were launched

- Linking also communities

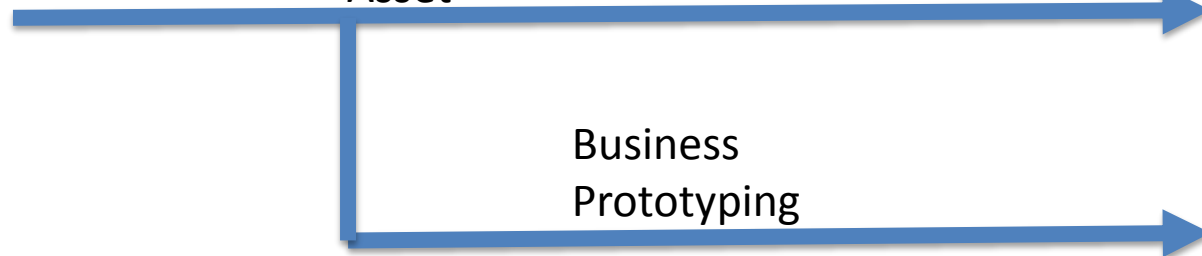- HiPEAC <-> ETP4HPC (HPC industry)

- Venture capital

HPC Curriculum

- Inventory of needs and supply of HPC courses for future HPC technology experts
- Focus is on
  - Defining a curriculum
  - Best practices for on-line learning
  - Launch of training pilots

Acceleration of Innovation

- Long "pregnancy" for bringing a research idea to commercial uptake

- Agility is needed:

Intellectual Asset
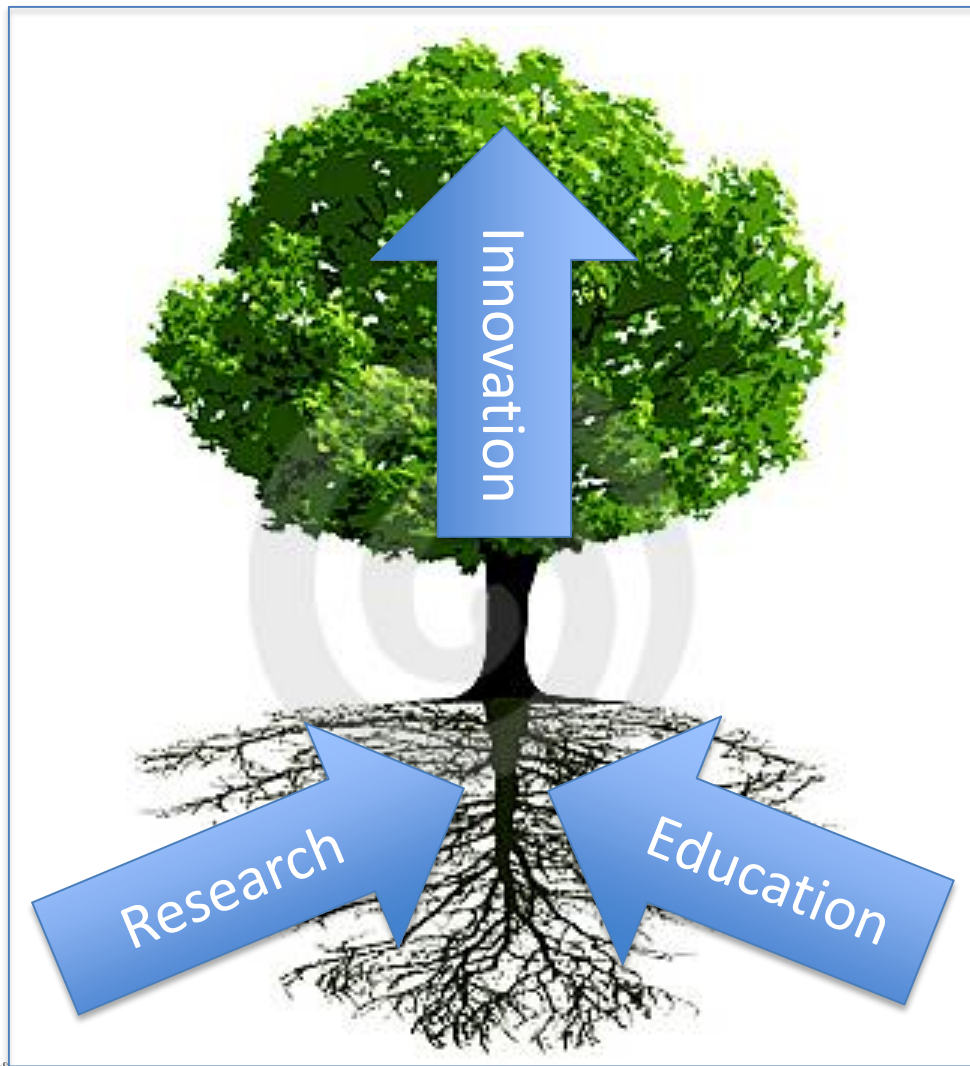
Long-term Research Project

Business Prototyping

- **Instrument:** Funding of Business Prototyping Projects (BPPs)
  - Funding for testing business hypotheses against customers
  - Call closed April 15. New call 2017.

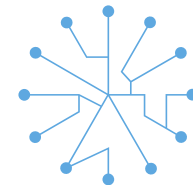# Vision: A Sustainable Centre of Excellence on HPC Systems

Suppliers of HPC technology

Innovation

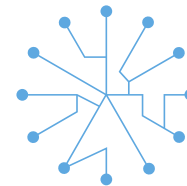Innovation Network

Research

Education

5/9/2016

Consortium

- Expertise spans system layers from applications via system software to platform architecture
- Strong links to HiPEAC, ETP4HPC, PRACE and EXDCI

Thank you!