THE HIPEAC NETWORK
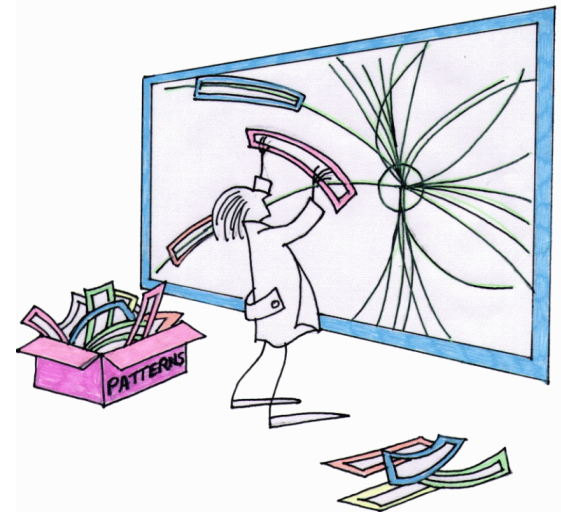
European Network of Excellence

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The HiPEAC Network

- **HiPEAC is a "European Network of Excellence on High Performance and Embedded Architecture and Compilation"**

- **All information presented here is from: http://www.hipeac.net/**

The HiPEAC Network

- **HiPEAC's mission is to steer and increase the European research in the area of high-performance and embedded computing systems, and stimulate cooperation between**
  - **academia and industry and**
  - **computer architects and tool builders.**
- The HiPEAC project has received funding from the European Union Seventh Framework Programme (FP7-ICT) under grant agreement number 287759.

The HiPEAC Network

- **High Performance and Embedded Architecture and Compilation**
- **From** 2012-01-01 **to** 2015-12-31
- The proposed HiPEAC network of excellence is a follow-up of an existing network and wants: (i) to steer and to increase the European research in computing systems; (ii) to improve the quality of the European computing systems research, and (iii) to create a visible and integrated pan-European community in computing systems.
- **Project details**
- **Project reference**: 287759
  Status: Execution

  Total cost: EUR 3 808 245
  EU contribution: EUR 3 800 000

- **Programme acronym:**
  FP7-ICT
- **Subprogramme area:**
  ICT-2011.3.4
- **Contract type:**
  Networks of Excellence

The HiPEAC Network

Coordinator

UNIVERSITEIT GENT	BELGIQUE-BELGIË ➕

Participants

THE UNIVERSITY OF EDINBURGH	UNITED KINGDOM ➕
RECORE SYSTEMS BV	NEDERLAND ➕
THALES SA	FRANCE ➕
ARM LIMITED	UNITED KINGDOM ➕
FOUNDATION FOR RESEARCH AND TECHNOLOGY HELLAS	HELLAS ➕
IBM ISRAEL - SCIENCE AND TECHNOLOGY LTD	ISRAEL ➕
ERICSSON AB	SVERIGE ➕
INSTITUT NATIONAL DE RECHERCHE EN INFORMATIQUE ET EN AUTOMATIQUE	FRANCE ➕
RHEINISCH-WESTFAELISCHE TECHNISCHE HOCHSCHULE AACHEN	DEUTSCHLAND ➕
COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	FRANCE ➕
BARCELONA SUPERCOMPUTING CENTER - CENTRO NACIONAL DE SUPERCOMPUTACION	ESPAÑA ➕
CHALMERS TEKNISKA HOEGSKOLA AB	SVERIGE ➕
STMICROELECTRONICS SRL	ITALIA ➕

The HiPEAC Network Activities

- There are three major activities:

  - The Computing Systems Week

  - The HiPEAC Conference

  - The ACACES Summer School

The HiPEAC Computing Systems Week

- It's an biannual event where HiPEAC members gather to showcase research activities, discuss research opportunities and adjust the HiPEAC roadmap and vision

- As part of the **research coordination program**, HiPEAC3 includes a new instrument, called Thematic Sessions. In HiPEAC3, any partner or member can propose a thematic session, on condition that it is related to the HiPEAC vision. A thematic session is comparable to an informal workshop. As an organizer, you will have to solicit contributions, but there should be no formal call for papers, neither a formal reviewing of the contributions. Proposers of a thematic session are encouraged to involve the FP7 projects and HiPEAC companies in the session they propose.

The HiPEAC Computing Systems Week

- **HiPEAC Industry Partner Program event**

- The HIPP event will consist of presentations (typically a short overview of your company's activities, your product strategy related to embedded or high performance computing, your technical challenges, and expectations from HIPEAC network). However, you can also decide to participate without a presentation.

- HIPP is the perfect opportunity to:
  - Be in contact with a wide source for highly qualified human resources (for internships or hiring in your company)
  - Discuss R&D roadmaps and priorities with main scientific stakeholders
  - Prepare future joint projects

The HiPEAC Conference

- **The HiPEAC conference provides a high-quality forum for computer architects and compiler builders working in the field of high performance computer architecture and compilation for embedded systems, but is also open to general-purpose research which is becoming increasingly relevant to the embedded domain.**

- Upcoming
  - HiPEAC 2015, Amsterdam, The Nederlands

- The three day event attracts about 500 delegates each year.

- Paper selection is done by ACM TACO, the ACM Transactions on Architecture and Code Optimization. Prospective authors submit their original papers to ACM TACO at any time before the paper deadline around **June each year**

The HiPEAC Summer School

- **ACACES: International Summer School on Advanced Computer Architecture and Compilation for Embedded Systems**

- **The "HiPEAC Summer School" is a one week summer school for computer architects and compiler builders working in the field of high performance computer architecture and compilation for embedded systems.**

- The school aims at the **dissemination of advanced scientific knowledge and the promotion of international contacts** among scientists from academia and industry.

- **Usually early July in Fiuggi, Italy**

HiPEAC Mobility Plans

- The mobility program is aimed at stimulating mobility between all partners and members of the network. The mobility program has **2 mobility instruments**, each targeted at a different type of collaboration.

- **Internships**: students staying at a company for several months to work on a research problem proposed by the company.

- **Collaboration grants**: students staying for several months (typically 3 months) at another institution/company to work on a jointly submitted research project.

HiPEAC Collaboration Grants

- **The Collaboration grants are available to all HiPEAC PhD students and junior post-doctoral researchers. Each grant will provide 5000 euros for a 3 month collaborative visit. The origin or destination institution has to be a HiPEAC member.**

- The application process is simple and straightforward. What is needed:
  - Applicant's name and institution
  - Proposed site and researcher to visit
  - Estimate of collaboration start date
  - Work to be performed
  - A statement of why a 3 month visit would be useful (max 100 words)

- The work to be performed should be a short description of the proposed work, what it is hoped will be achieved, its relevance to HiPEAC and how it contributes to HiPEAC's goals.

- Priority will be given to those applications judged likely to lead to high quality joint publications.

HiPEAC Industrial Internships

- **HiPEAC** funds several industrial internships for **PhD students in Europe** in order to increase industry-academia collaboration. The HIPEAC Industrial Internship Programme encourages PhD students who are doing their PhDs at one of the HiPEAC **industrial institutions** in Europe to gain industrial experience. The internships cover a 4-month period and are partly funded by HiPEAC.

HiPEAC Industrial Internships

- **How much money does a student get?**
  - *55 Euros per diem (€6600 for 4 months) + travel expenses*
- **How is the payment done?**
  - The internship funding model for **HiPEAC** has changed for the Hipeac member companies. **HiPEAC** will only fund **50%** of the internship costs. The **HiPEAC** member companies will match the remaining **50%** of the costs.
- There are two payment options for companies:
  - **Option 1: HiPEAC** directly pays the student 50% of the salary, and companies pay the remaining 50%
  - **Option 2:** Company directly pays the student but at the end of the year, the company reclaims 50% from **HiPEAC**

The HiPEAC Paper Award

- **The HiPEAC Paper Award aims to encourage HiPEAC members to publish their work at conferences in which Europe is not strongly represented. The award consists of a certificate and a financial award of € 1000.**
- The award is given to a HiPEAC member who presents a full paper in one of the following list of conferences (decision of the HiPEAC Steering Committee):
  - Symposium on Principles of Programming Languages (POPL)
  - Conference on Programming Language Design and Implementation (PLDI)
  - Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)
  - International Symposium on Computer Architecture (ISCA)
  - International Symposium on High Performance Computer Architecture (HPCA)
  - Symposium on Field-Programmable Custom Computing Machines (FCCM)
  - Design Automation Conference (DAC)
  - Symposium on Microarchitecture (MICRO)

The HiPEAC Paper Award

- The following rules govern the HiPEAC award:
  - Only HiPEAC members are entitled to get an award
  - All authors get a HiPEAC award certificate
  - A HiPEAC member can receive a financial award only once
  - The work needs to have been done in Europe
  - If a paper is co-authored by two or more HiPEAC members who never got a financial award before, they have to decide whom will receive the award (only one award per paper)
  - Members can decide not to accept the financial award

HiPEAC Tools

- Website with computing tools available for **free** for all HiPEAC members →
  They are usually products of research projects

- http://www.hipeac.net/tools

HiPEAC Publications

- There are two main HiPEAC publications

  - The HiPEAC Roadmap → http://www.hipeac.net/roadmap
    It's a clear guide of the direction of funding Europe will give in the area of ICT for Horizon 2020 projects

  - The HiPEAC Newsletter → http://www.hipeac.net/newsletter
    News from the network, new projects, job offers, conferences, internship reports, PhD reports etc.

HiPEAC Membership

- HiPEAC is an open network. This means that all activities are open to the public.

- Active professionals in the domain of high-performance and embedded computing systems can apply for HiPEAC membership.

- HiPEAC members can enjoy the membership benefits, such as networking, newsletters, and mobility support, without any legal obligations.

- HiPEAC does expect that members actively contribute to the community, e.g. by participation in meetings, joint publications, etc.

- If you are interested in becoming a HiPEAC member, please submit an informal application (including a short statement of your specific HiPEAC interests and research activities and a brief CV) by email. Your application will be evaluated by the HiPEAC Steering Committee, and a decision will normally be made within 4 weeks.

HiPEAC Membership

- http://www.hipeac.net/dmemberslist
- PhD Students can become "PhD Student members" affiliated to their supervisor
- Post Docs can also become "Affiliate Members" also in collaboration to a supervising member
- e.g. there are 112 members in Italy, 62 members in Greece, 338 members in Spain etc.

Our HiPEAC Thematic Session

- **"High Performance Embedded Systems for High Energy Physics Applications"**

- Programmed for Thursday October 9th on 11:00 up to 12:30 local time (90mins)

- **Very good opportunity for networking especially since we plan to take advantage of new Horizon 2020 calls**