



DEEP

DEEP - Europe towards Exascale

- What is the goal of the project?**
- Develop a novel, Exascale-ready architecture
 - Build and validate a prototype system
 - Demonstrate scalability and energy efficiency in applications
- How to do it?**
- Drive HW/SW co-design cycle
 - Achieve leading scalability and energy efficiency
 - Match HW and application scalability demands
 - Provide an easy-to-use Exascale environment
 - Expand the Exascale ecosystem

DEEP-ER

DEEP-ER: Taking the DEEP Architecture to the Next Level

- What is the goal of the project?**
- Extend the DEEP architecture for scalable I/O and resiliency
 - Update to next generation CPUs
 - Introduce non-volatile memory
- How to do it?**
- Port & optimize parallel I/O systems
 - Prototype I/O interface extensions
 - Implement distributed, multi-level cross-layer task-based resiliency
 - Evaluate and validate with key HPC applications

DEEP MOMENTS

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deep-project.eu
www.deep-er.eu

More than 80 people from 16 different partners, distributed over eight European countries, more than 220,000 hours of work in the last three and a half years: the DEEP project has played a major role in the working life of many of the team members. Yet the project would certainly not have been such a success without the dedication shown by each and every person involved. This section captures our unique DEEP team spirit.



Julián David Morillo Pozo
Research Support Engineer,
Barcelona Supercomputing Center

“The individual commitment to the DEEP group effort was what made the project work. From the beginning everyone had a clear plan to accomplish the project objectives. I’m determined to apply what I have learned in whatever upcoming project I participate in.



Anna Wolf
Application Support Engineer,
Jülich Supercomputing Centre

“Working in such a fascinating project with so many excellent partners from all across Europe was a great start to my working life after my Master’s degree. I got a good insight into the variety of applications. Supporting the developers in enhancing their code and porting it to the new system was an exciting challenge.



Michael Ott
Head of Hardware Labs,
Leibniz Supercomputing Centre

“DEEP was like a huge playground: we could come up with an entirely new framework to make supercomputers more energy efficient – and it looks really promising. This would not have been possible without the input of so many skilled people inside and outside of the project.



Mauro Rossi
Chief Engineer,
Eurotech

“The challenges I had to deal with during the early conceptualization phase of the project were extremely exciting: finding technological solutions to fit all electronics, cooling and interconnections in such a compact volume was an intriguing and intricate puzzle to solve.

DEEP INVOLVEMENT



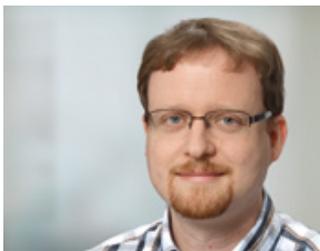
Pramod Kumbhar
HPC Engineer, Blue Brain Project,
École Polytechnique Fédérale de Lausanne

“ Simulations of morphologically detailed brain models are computationally challenging and will need capabilities at the Exascale. DEEP is an interesting co-design project which helped us to develop and prepare the application for future heterogeneous architectures.



Andreas Galonska
Software Engineer,
Jülich Supercomputing Centre

“ It was very exciting to exploit cutting-edge technologies with innovative software solutions. The great teamwork with our international partners was very fruitful and the basis of the success of our project.



Thomas Moschny
Chief Technical Officer,
ParTec

“ Being part of a team of researchers and HPC specialists from all over the EU developing a radical new architecture on the way to Exascale has been an outstanding experience. The joint effort by all partners led the project to great success.



Sabrina Eisenreich
PR Manager Research Projects,
Leibniz Supercomputing Centre

“ Joining the team only midway, I was immediately struck by the positive spirit and the tremendous dedication to the project my new colleagues showed. Being part of DEEP was of course always guided by the will to make this ambitious Exascale endeavour a success. Yet it was also great fun to work with this skilled and motivated international group of people.

In Memoriam

The whole DEEP team would like to express our heartfelt, deep, sincere sympathy and condolences on the sudden and unexpected passing of our colleague Dr. Alec Johnson in December 2014.

We all have come to know Alec as an extremely passionate, inspiring and hard-working colleague and scientist. But he was missed in the project most of all for his kind, friendly and caring personality.

Our thoughts are with his family.

The DEEP Project Colleagues