

# Taking on Exascale Challenges: Key Lessons & International Collaboration Opportunities

Birds-of-a-Feather Session at SC15

Jointly organised by European Exascale Projects and ETP4HPC

**Date:** Thursday, November 19

**Time:** 3:30-5:00pm

**Location:** Room 13A, Austin Convention Centre

## Abstract

The European HPC Technology eco-system has entered a stage of rapid development. This acceleration is due to the progress of the established EU-funded projects ((CRESTA, DEEP/DEEP-ER, Mont-Blanc, NUMEXAS, EXA2CT, EPIGRAM and NESUS) and also the 19 new projects within the first part of the Horizon 2020 programme addressing: HPC core technologies and architectures, programming methodologies, languages and tools, APIs and system software, new mathematical and algorithmic approaches.

This session will present the work of these projects in the areas of: Compute, Interconnect, Memory and Storage, Data intensive real-time, Programming Tools, Mathematics and Algorithms, summarising the achievements to date, future objectives and the potential areas of collaboration with other regions.



*The landscape of the European HPC Technology R&D*

This will be followed by a panel discussion on the international opportunities generated by this eco-system and the mechanisms needed to facilitate this process.

There are two documents available associated with this BOF:

- A **European HPC Technology Project Handbook** detailing all the projects is available at the event (Please collect one from the organisers now).
- A **Report** from this BOF.

Please leave your business card and both documents will be sent to you via email. These documents will also be published on the website of ETP4HPC (the European Technology Platform for HPC), [www.etp4hpc.eu](http://www.etp4hpc.eu), and the individual project websites. You can also contact the Office of ETP4HPC at [office@etp4hpc.eu](mailto:office@etp4hpc.eu) with a request to receive a copy of either.

# Programme

- Introduction**      **Overview on the European Exascale Landscape**  
15 min              By Jean-François Lavignon, ETP4HPC Chairman and Atos
- Talks**              **Presentation of Focus Technology Research Areas**  
30 min
- Area 1: Architecture & Compute**  
By Filippo Mantovani, Technical Project Coordinator Mont-Blanc,  
Barcelona Supercomputing Centre
- Area 2: Interconnect, Memory & Storage and Data-intensive Real-Time**  
By Prof. Jesus Carretero, Computer Architecture Professor, Computer Science  
and Engineering Dep. University Carlos III of Madrid
- Area 3: Programming Tools, Algorithms & Mathematics**  
By Stefano Markidis, Assistant Professor, KTH Royal Institute of Technology
- Panel Discussion**      **International Collaboration Opportunities arising and mechanisms needed**  
45 min              *Featuring distinguished international guests:*
- Mitsuhsa Sato, Co-project leader of Post-K, University of Tsukuba & RIKEN AICS
- Franck Capello, Argonne National Laboratory, Senior Computer Scientist,  
Director of the INRIA, UIUC, ANL, BSC, JSC and Riken Joint Laboratory on  
Extreme Scale Computing
- Eric Van Hensbergen, Senior Principal Research Engineer, ARM
- Moderated by Sai Narasimhamurthy, Staff Engineer, Research, Seagate**

## Additional Information

A list of the European Horizon 2020 projects:

[http://cordis.europa.eu/search/result\\_en?q=contenttype%3D%27project%27%20AND%20%27FETHPC%27&p=1&num=10&srt=/project/contentUpdateDate:decreasing](http://cordis.europa.eu/search/result_en?q=contenttype%3D%27project%27%20AND%20%27FETHPC%27&p=1&num=10&srt=/project/contentUpdateDate:decreasing)

[http://cordis.europa.eu/projects/home\\_en.html](http://cordis.europa.eu/projects/home_en.html) (search for FETHPC)

[www.etp4hpc.eu](http://www.etp4hpc.eu) – the website of ETP4HPC (the European Technology Platform for HPC)

<http://exascale-projects.eu/> - an overview on FP7-funded projects