

UBIVERTEX - Letter of Intention

Institute/Company ENS Lyon and INRIA

Name: LIP laboratory

Country: France

Activity domain: Higher Education and Research

Number of employees: ☒ <50 ☐ <250 ☐ > 500

Name of the department/research team: GRAAL

Scientific contact

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Challenge descriptions:

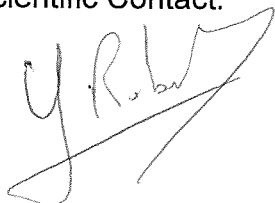
On the application side, the new platform will be used as a testbed to design, implement and evaluate new linear algebra algorithms on virtualized massively parallel architectures. The target will be on dense numerical solvers, whose sustained performance is at the heart of many scientific applications. The goal is to design generic massively parallel algorithms, whose granularity and required locality will be tuned to emulate the characteristics of state-of-the-art HPC machines, organized as hierarchical clusters of multi-core processors.

There is a clear analogy with the systolic, or wavefront algorithms of the 1980s, but with an additional level of virtualization to enable performance and scalability on modern hardware platforms. This research will be conducted in cooperation with the ICL laboratory of the University of Tennessee (Jack Dongarra, Jakub Kurzak, Piotr Luszczek).

Type of commitment (internship, PhD grant, engineering staff):
Research staff and PhD students

Number of persons involved in these challenges: 4

Signature of
Scientific Contact:



Date: Sept 8, 2011

Signature of the
Legal Representative:
Frédéric Vivien, Head of GRAAL team



Date: Sept 8, 2011