

## UBIVERTEX - Letter of Intention

Institute/Company: INRIA – I3S - CNRS

Name: I3S

Country: France

Activity domain: Computer Science

Number of employees:  <50  <250  > 500

Name of the department/research team: CeP (Constraints and Proofs)

### Scientific contact

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### Challenge descriptions:

The “Constraints and Proofs” team (CeP team) will strongly benefit from the development of the UBIVERTEX platform in two different ways.

On one hand, the CeP team is specialized in the resolution of complex combinatorial problems, like software testing, verification or TSP, requiring a large capacity of computation. Thus, such a platform will help the team for solving large scale optimization problems as the ones we find in industrial applications and that cannot be solved by using classical machines. That is, the team will be able to solve real world problems and not only classical benchmarks. This will lead to a better comprehension of such problems and give to the team the capability to address more problems.

On the other hand, the CeP team is strongly involved in the resolution of problems involved in cloud management. The CeP team could help the management of that platform, notably by defining and solving the corresponding optimization problems. The CeP team mainly uses constraint programming techniques which are quite flexible and so can address additional constraints that cannot be defined a priori. The platform will become an experimental environment having real world size for checking the CP methods for solving and defining cloud management problems in conjunction with quality of service, fault tolerance and reliability constraints. In addition, the team could experiment some algorithms for improving the energy efficiency of such platform.

Type of commitment (internship, Phd grant, engineering staff):

Number of persons involved in these challenges: 25

Signature of

Scientific Contact:



Date: le 9 septembre 2011

Signature of the

Legal Representative:

Date: