

## UBIVERTEX - Letter of Intention

Institute/Company : CNRS

Name: LAAS

Country: FRANCE

Activity domain: distributed computing, computational electromagnetics

Number of employees: 80 in the three groups , > 500 in the whole laboratory

Name of the department/research team: MINC, MRS and TSF

### Scientific contact

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### Challenge descriptions:

Three research groups are interested in contributing to UBIVERTEX and using the proposed platform to support their research activities : MRS, MINC and TSF.

The MRS Group focuses on distributed systems and networks in terms of performance. Virtualized systems is one of the possible platform. The goal of the collaboration with the MINC group is the creation of new methods and associated software for electromagnetic simulation of oversized systems. A great number of virtualized resources will be used in the following topics:

- Autonomic systems are one solution to the effective management of complex software architectures. We are particularly interested in analysis, prediction and performance management in the development of large scale services. The platform ubivertex will help to validate the created models and to implement them in extreme cases which reflect the reality of thousands or millions of users. We will also study the impacts of virtualized architectures on performance.
- Electromagnetic Simulation of oversized system (wave propagation in an airplane for example) is relatively resource intensive and lends itself to distributed architectures. It requires access to computing resources, network and storage. The use of virtualized architectures will demonstrate the capacity of those architecture and help to test the limits of the theoretical methods developed.

The TSF research group activities concern dependable and secure computing. The research topics related to UBIVERTEX concern the design and experimental assessment of new techniques aimed at enforcing the dependability and security of applications that are deployed in virtualized

environments such as grids and clouds. The proposed platform would be very useful to experiment our solutions. Another intended direction would be to design appropriate techniques that can enforce the security and dependability of the UBIVERTEX platform itself .

Type of commitment (internship, Phd grant, engineering staff):  
Funded by French ANR project SOP and European ITEA project (A2NETS), the teams (will) fund internships, PhD grants and Engineers on the development of these topics.

Number of persons involved in these challenges: 8 permanent researchers, 8 PhD students

Signature of  
Scientific Contact:

Signature of the  
Legal Representative /  
Head of the Institute /  
Project Coordinator  
*(delete as appropriate*

Date:

Date: