



Integrate the needs for High Performance Computing and data processing in the design of a new generation of multiprocessor servers for the 2008 timeframe. Develop programming tools and libraries to facilitate a high level of parallelisation for future applications, demonstrate the efficiency on some applications requiring high computing performance and processing high volume of data.

## PROJECT RESULTS

- ▶ **Products:**  
PC system and HPC software.
- ▶ **Services:**  
Optimization of architectures and applications.
- ▶ **Patents:**  
No joint patents, but new IP for partners.
- ▶ **Technologies:**
  - Functional mock-up and specifications for future servers available.
  - Threads management, iterative compiling and multicore parallelisation have been worked in view of scientific processing and used for some applications.
  - ILOG solver on large SMP servers available.
- ▶ **Publications:**  
26 publications, project presentations in HPC Europe Workshop and Ter@tec Events.
- ▶ **Experimentations:**
  - Data base for 20 million images created first time with tools allowing "intelligent search".
  - Airflow for a complete airplane simulated with 20 million elements.
  - Oil reservoir simulated with 112 million elements, spanning over 300 exploitation days.
- ▶ **Business creation:**  
Start up creation; new position in market for several partners.

## CONTACT

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## PARTNERS

Large companies:  
BULL, DASSAULT AVIATION,  
ILOG

Intermediate size enterprise:  
ILOG

SMEs:  
CAPS-ENTREPRISE,  
NEWPHENIX, RESONATE MP4

Research institutes, universities:  
CEA, ECOLE CENTRALE PARIS,  
INSTITUT FRANÇAIS DU  
PÉTROLE, INRIA, INT-ARTEMIS,  
UNIVERSITÉ D'ÉVRY,  
UNIVERSITÉ DE VERSAILLES  
SAINT-QUENTIN

## PROJECT DATA

Coordinator:  
BULL

Call:  
FUIO

Start date:  
March 2006

Duration:  
18 months

Global budget (M€):  
11.3

Funding (M€):  
4

Related Systematic project(s):  
CARRIOCAS, IOLS, ParMA

<p><b>Avionics</b></p> <p>For an airplane : Higher performance Higher environmental constraints Higher security and comfort More competitive = Demonstrate next generation simulation 4 years in advance</p>	<p><b>Oil industry</b></p> <p>Simulation of polyphasique flows in oil fields = More precise for higher production</p>
<p><b>Multi criteria and multi lingual research tool</b></p> <p>Textes, images, ... = classification, extraction, summary, search</p>	<p><b>Integrative biology</b></p> <p>Large database in XML with XediX for the Physionne project - Large amount of data - Heterogeneous data - Interactive and powerful access = From genome to human being</p>
<p><b>XediX, a XML data base</b></p> <p>Due to new parallel architecture : = New level of performance 50 TeraBytes database = New applications Distributed on servers</p>	<p><b>Multimedia</b></p> <p>- Video on demand - Interactive video - Meta data addition = Rich and interactive multimedia access</p>