

COMPLETED

The 1st target of IOLS was the design and the development of generic software and platforms for products and process global design and optimisation (coupling, large-scale meshes, visualisation, ...). The 2nd goal was the development of methodologies for multiscale simulations and multi-disciplinary optimisation. Demonstrators were essentially focused on industrial computer-aided solutions for materials applications: aging, multi-materials assemblies, new advanced materials for optics. IOLS was also the first project to deal with Simulation LifeCycle Management and CAD-CAE links applied to crashworthiness analysis.

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IOLS

Infrastructures and Software Tools for Simulation

PROJECT RESULTS

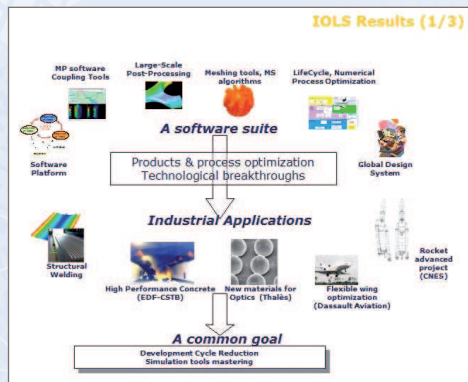
- **Products:** Platform and tools: Integration/Coupling of new «black box software tools» (CNES); New coupling tool integration (applications for CEA, EDF); Large-scale data visualization (filtering/décimation); Meshing tools; Commercial tools (ESI Group, Samtech ...)
- **Services:** Crashworthiness analysis of multi-materials assemblies; Injection component optimization (plastery); Optics properties (Periodical structured materials design)
- **Technologies:** Multi-Scale & Multi-Physics calculation for behaviour and aging of metallic materials and concrete; Welding process simulation tools
- **Publications:** J. Duysens, " IOLS : A French Initiative for Developing Platforms and Software dedicated to High Performance Multiphysics and Multidcale Global Design Optimization", 7th World

Congress on Computational Mechanics, July 16-22, 2006, Los Angeles, CA, USA; Duysens J., Langlois St., Nakhlé M., «High Performance Computing Approach for Advanced Polymer Injection Molding Simulation», 9th US National Congress on Computational Mechanics, July 22-26, 2007, San Francisco, CA, USA

- **Job creation:** global figure estimated to 50 or 60
- **Business creation:** industrial deployment of Simulation Lifecycle Management technology ; new business for commercial software (crashworthiness and welding process fields)

CLUSTER RELATED PROJECTS

EHPOC, MACAO (Aerospace Valley)



PARTNERS

MAJORS CORPORATIONS

BERTIN TECHNOLOGIES, CS, EADS, EDF, DASSAULT-AVIATION, DASSAULT-SYSTÈMES, SNECMA, RENAULT, THALES

SMEs

ESI GROUPE, OPEN-CASCADE, DISTENE, SAMTECH

ACADEMICS

CEA, CSTB, CNES LAMSADE, ECP, ENSMP, ENS, IFP, INRIA, ONERA

Coordinator: CS
Duration: 28 months
Global budget: 11.4 M€
Funding: 4.80 M€ by FUI

Modelling systems simulation // // // // Systems Design and Development Tools WG