



General overview of the I3S laboratory



■■■■■ accueil

■ COMRED

■ GLC

■ MDSC

■ SIS



Research activities

- **communication networks and embedded and distributed systems**
- **software and knowledge engineering**
- **formal discrete models for complex systems**
- **signal-processing, image-processing and control**

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The I3S laboratory ("*Laboratoire d'Informatique, Signaux et Systèmes de Sophia-Antipolis*") is a leading French academic research unit in the field. The laboratory is home to more than 115 academics including Professors and Associate Professors from the University of Nice-Sophia Antipolis along with full time researchers from CNRS and INRIA. The laboratory is hosted across three neighbouring sites: Algorithmes/Euclide B, Polytech'Sophia/Templiers and INRIA Sophia-Antipolis Méditerranée.

The research teams are structured into four departments, COMRED, GLC, MDSC and SIS. They cover, almost continuously, all the spectrum of computer science, from the most theoretical to rather applied aspects, and electrical engineering, including signal and image processing, automatic control and robotics.

↘ The research activity in COMRED ("*COMmunications, Réseaux, systèmes Embarqués et Distribués*") is centred on communication networks and embedded and distributed systems.

The advanced design of such systems is investigated, considering the whole treatment chain including graph-based modelling, formalism for specification, programming frameworks, together with implementation, optimization, analysis and simulation techniques.

Contacts: [Jean-Claude Bermond](#) & [Robert De Simone](#)

↘ The research activity in GLC ("*Génie du Logiciel et de la Connaissance*") is centred on software and knowledge engineering.

Techniques are studied and developed to master software complexity, dynamicity and adaptability. Their implementation is considered on largely distributed architectures (grid computing, ambient computing), together with the semantic description of processes and data as well as the design and use of knowledge databases.

Contacts: [Michel Riveill](#) & [Philippe Lahire](#)

↘ The research activity in MDSC ("*Modèles Discrets pour les Systèmes Complexes*") is centred on formal discrete models for complex systems.

The investigation objectives include system verification, cellular automata, bioinformatics, constraint programming and languages. Theoretical and formal methods are defined on discrete modelling frameworks to provide software tools and answer qualitative issues concerning complex systems from the real world.

Contacts: [Michel Rueher](#) & [Gilles Bernot](#)

↘ The research activity in SIS ("*Signal, Images, Systèmes*") is centred on signal-processing, image-processing and control.

General purpose mathematical tools, including tensors, time-frequency analysis, information theory, advanced control theory, ..., are used and developed for various applications in the fields of telecommunications, wireless networks, biomedical signal processing, environmental data processing, image and video compression, computer vision, nonlinear dynamical systems and robotics.

Contacts: [Luc Deneire](#) & [Eric Debreuve](#)

The laboratory invests on average 2 M€ per year (not including salaries) in research activities from which more than 90% is funded through competitive grants and industrial collaborations. In 2009, for instance, 29 projects have been supported by the ANR (National Agency for Research) and 7 by the European Union.

The scientific achievements have been highly successful over the last four years as demonstrated, for example, by more than 300 papers published in international peer-reviewed journals.

These factors underline the international importance and impact of the research carried out at the I3S laboratory.

Contacts : [Luc Pronzato](#) , director & [Olivier Meste](#) , deputy-director

Laboratoire d'Informatique, Signaux et Systèmes de Sophia-Antipolis
I3S - UMR6070 - UNSA CNRS
2000, route des Lucioles - Les Algorithmes - bât. Euclide B - BP 121 - 06903 Sophia Antipolis Cedex - France
Tél. +33 4 92 94 27 01 - Fax : +33 4 92 94 28 98 - www.i3s.unice.fr