



Laboratory

*Informatique, signaux et systèmes de Sophia Antipolis
Computer Science, Signal processing and Systems @ Sophia Antipolis*

Joint Research Unit between UNS & CNRS (UMR 7271)

Director: Olivier Meste

www.i3s.unice.fr



I3S Members

Joint Research Unit between UNS & CNRS

~270 positions: 150 permanent and 120 temporary

Researcher staff

- 99 UNS
- 20 CNRS
- 13 Inria

Administrative staff

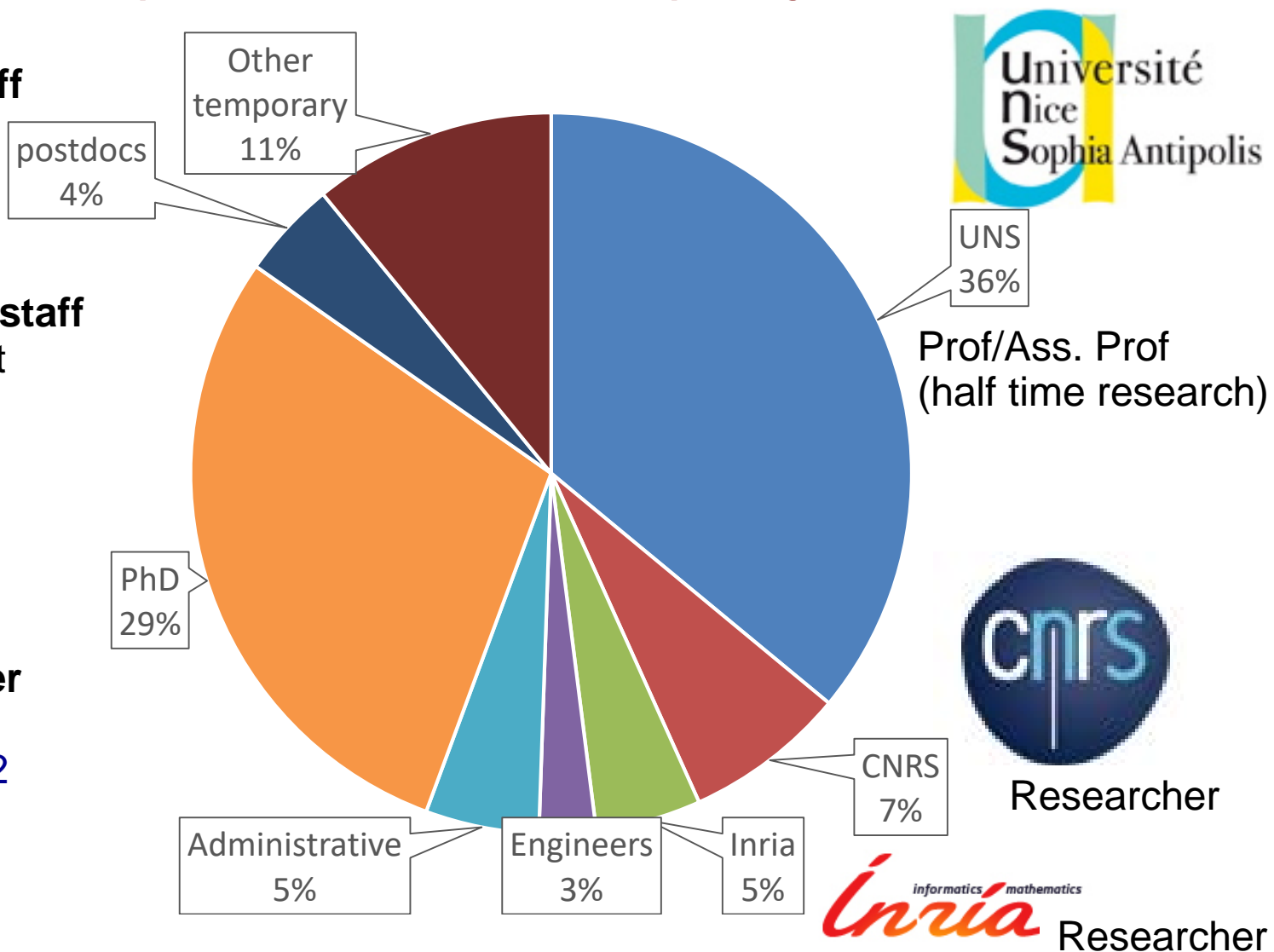
- 12 permanent
- 2 short-term

Engineers

- 7 permanent
- 30 short-term

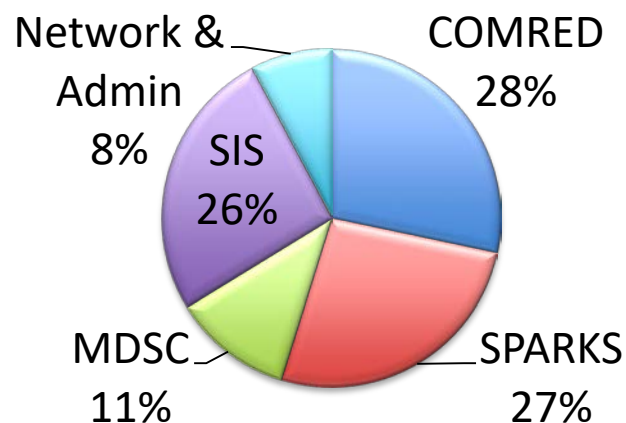
Young researcher

- PhD : 80
- PostDocs : 12



Structure: 4 Scientific Teams

COMRED COMMunications, Réseaux, systèmes Embarqués et Distribués Communications, Networks, Embedded and Distributed Systems	F. Havet (CNRS)	INRIA
SPARKS Scalable and Pervasive softwARE and Knowledge Systems	A. Tettamanzi (UNS)	Templiers
MDSC Modèles Discrets pour les Systèmes Complexes Discrete Models for Complex Systems	E. Formenti (UNS)	Algorithmes
SIS Signal, Images, Systèmes Signal, Image, Systems	V. Zarzoso (CNRS)	Algorithmes + IBV



◆ Contact: F. Havet

◆ Groups/Projects

- **KAIROS** (I3S/Inria): Models and methods for analysis and optimization of real-time embedded systems
 - ❑ Model-based design of embedded systems
- **COATI** (I3S/Inria): graph theory, combinatorics, optimization and algorithms for telecommunications
 - ❑ Networks design and communication algorithms
 - ❑ Discrete mathematics and graph theory
- **SCALE**: Safe Composition of Autonomous applications with Large-SCALE Execution environment
 - ❑ Distributed, parallel and autonomic programming models
 - ❑ Computational intensive and largely distributed applications

SPARKS

Scalable and Pervasive softwARe and Knowledge Systems

◆ Contact: A. Tettamanzi

Location: Templiers

◆ Groups / Projects

- **KLE:** Knowledge extraction and learning
 - ❑ Data mining
 - ❑ Machine learning
 - ❑ Knowledge discovery
- **FORUM:** Formalizing and Reasoning with Users and Models
 - ❑ Knowledge representation
 - ❑ Reasoning
 - ❑ Information integration
 - ❑ Interaction with users
- **S3:** Scalable Software Systems
 - ❑ Distributed Computation
 - ❑ Dynamic software adaptation
 - ❑ Software product lines
 - ❑ Systems Scalability

◆ Contact: E. Formenti

Location: Algorithmes

◆ Groups / Projects

➤ **CMB:** Formal methods for bioinformatics

- Formal methods applied to the dynamics of genetic networks
- Bio-inspired complex system

➤ **CSOPV:** Constraint-based programming

- : Constraints techniques and applications

➤ **MCS:** Models for complex systems

- Complex systems and discrete dynamical systems
- 3D biological modeling and cellular automata

◆ Contact: V. Zarzoso

Location: Algorithmes

◆ Groups / Projects

➤ **Signals**

- ❑ Signal: Biomedical signal processing
- ❑ SigNet: Telecommunications and networking

➤ **Images**

- ❑ MediaCoding: Multimedia coding and processing
- ❑ Morpheme: Morphological properties of biological structures

➤ **Systems**

- ❑ Autonomous Systems: Control for autonomous vehicles (aerial, surface and underwater)
- ❑ Design: design of optimal experiments, estimation problems

National and International Achievements

(past 5 years)

- ◆ More than 350 international journal papers and 900 international conferences papers
- ◆ 30+ ongoing ANR-funded projects
- ◆ 10+ ongoing EU-funded projects
- ◆ 20+ patents submitted
- ◆ 30+ software applications submitted to the APP agency (« Agence pour la Protection des Programmes »)
- ◆ 50+ academic collaborations
 - Europe, Africa (Algeria, Morocco, Tunisia), America (USA, Brasil, Chile), Asia (China, Vietnam, Japan),

National and International Positioning

◆ Participation to several international research networks

- Equipes associées Inria (Chili, China)
- Sino-French IT Lab in Beijing (LIA CNRS LIAMA)
- Argentine-French IT Lab in Rosario (LIA CNRS CIFASIS)
- GDRI Zoomathia

◆ Contribution to standards

- ETSI: European Telecommunications Standards Institute
- OMG: Object Management Group (Cloud computing, Embedded systems)
- W3C: Web languages and protocol

Startup Creation & Support

◆ Participation to 4 startup creations since 2006

- ActiveEon (2006): Parallel computing solutions for multi-core computers, clusters and clouds



- VU Log (2006): Software and services for urban mobility

- Mnemotix (2012): Semantics of Business Data



- Cintoo3D (2013) : 3D data compression and communication



- 2 more startup creation projects on-going

◆ Support of projects in startup incubator program

- SimplySim (OPTIS Group): Real time virtual reality for visualization, simulation and training

- Bewave: Sensor network management for energy saving in smart buildings

- MovingPlayer: Design studio for massively multiplayer games on mobile platforms

- FranceLab: Data mining

- Instant Systems (2013): calcul d'itinéraire multi-modaux avec profil utilisateur

- Azameo (2014): profiling eClient

Training and knowledge dissemination

◆ Training through research

- 25 PhD/year and 70 internship/year
- Activities in computing engineering, training for industrial companies
- Most advanced equipment

◆ Teaching

- Participating to university degree courses (Master & Engineering degree)
- Creation of international masters in networking, IoT and data sciences

◆ Courses and seminars

- Setting up research courses, seminars and working groups
- National and international conferences
- Winter and summer schools