

## ROSP TEAM

### Operational Research for Production Systems

Developing efficient optimization methods for the operational management of production systems

The objective of our team is to model, analyze and develop optimization methods to solve logistic and production problems. To do this, we use operational research tools and techniques. We work both on theoretical models and on industrial applications.



#### Research Topics

- Industrial logistics : problems relating to supply chain design, planning (lot sizing), and transport (TSP, VRP, IRP, TPP)
- Proximity logistics : short (food) supply chains, urban logistics, home healthcare, vehicle sharing systems (bikes and cars)
- Scheduling: High multiplicity problems entailing uncertainty and resource constraints (robots, AGV), and considering machine or operator unavailability
- Développement et intégration des outils de la RO : Development and integration of OR tools: getting different techniques to cooperate, e.g. mathematical programming, dynamic programming and constraint programming

#### Scientific Challenges

- Development of original methods for tackling today's industrial and societal problems
- Strengthening of our actions in order to integrate sustainable development in our models
- Further integration of OR tools to solve difficult problems thanks to our team's expertise in these different techniques

#### Partnerships

- Bilateral agreements with a range of industrial partners (A-Systems, Le Bon Côté des Choses, Geoconcept, Renault, STMicroelectronics)
- Joint publications as part of extensive international collaboration (England, Canada, Hong Kong, Morocco, Poland, etc.).

